

EXHIBIT “B”

Swarthmore

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Directions for Correspondence

Swarthmore College, 500 College Avenue, Swarthmore PA 19081-1390

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This *Bulletin* contains policies and program descriptions as of July 15, 2012, and should be used solely as an informational guide. The College reserves the right to alter or amend at any time the policies or programs contained in the *Bulletin*. Students are responsible for informing themselves of current policies and meeting all relevant requirements. Up-to-date

information can be found at
www.swarthmore.edu/coursecatalog.

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Cognitive Science	Music and Dance
Comparative Literature	Peace and Conflict Studies
Computer Science	Philosophy
Economics	Physical Education and Athletics
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College Calendar

2012

Fall Semester

Aug. 25–28	International student orientation.
Aug. 28	Residence halls open for new students.
Aug. 28–Sept. 2	Orientation and placement days.
Aug. 30	Advising begins. All-adviser meeting in morning. Individual advising begins in afternoon.
Aug. 31	Residence halls open for returning students. Computer preregistration for first-year and transfer students only.
Sept. 1	Registration follow-up meeting for students who need to make a change to their schedule.
Sept. 2	Meal plan starts at dinner for returning students.
Sept. 3	Classes and seminars begin. Labor Day—classes in session.
Sept. 14	Drop/add ends. Last day to delete a course from or add one to permanent registration.
Sept. 21–22	Board of Managers meeting.
Oct. 1	Final examination schedule available online.
Oct. 12	October break begins at end of last class or seminar.
Oct. 22	October break ends at 8:30 a.m.
Oct. 26–28	Garnet Homecoming and Family Weekend.
Nov. 7	Schedule of courses and seminars for next semester available online.
Nov. 9	Last day to declare CR/NC grading option. Last day to withdraw from a course and receive the grade notation “W.”
Nov. 12–21	Advising period.
Nov. 21	Thanksgiving break begins at end of last class or seminar.
Nov. 26	Thanksgiving break ends at 8:30 a.m.
Nov. 26–28	Pre-enrollment for spring semester.
Nov. 28	Pre-enrollment ends at 4 p.m.
Dec. 1	All accounts must show a zero or positive balance to enroll or select a room for spring semester.
Dec. 7–8	Board of Managers meeting.
Dec. 10–11	Monday follows the “Friday” class schedule, replacing the Friday of Thanksgiving break. Tuesday follows the “Thursday” class schedule, replacing the Thursday of Thanksgiving break.
Dec. 11	Classes end. Lottery for spring housing.
Dec. 14	Final examinations begin.
Dec. 14–22	<i>Note:</i> Final examinations are not rescheduled to accommodate travel plans. If you must make travel arrangements before the examination schedule is published (by Oct. 1), do not expect to leave until after finals.
Dec. 21	Seminars end.
Dec. 22	Final examinations end at noon. Meal plan ends at lunch. Residence halls close at 6 p.m.

College Calendar

2013

Spring Semester

Jan. 19	Residence halls open at noon.
Jan. 20	Meal plan starts at dinner.
Jan. 21	Classes and seminars begin.
	Martin Luther King Jr. Day—classes in session.
Feb. 1	Drop/add ends. Last day to delete a course from or add one to permanent registration.
Feb. 22–23	Board of Managers meeting.
March 8	Spring break begins at end of last class or seminar.
March 18	Spring break ends at 8:30 a.m.
March 29	Last day to declare CR/NC grading option. Last day to withdraw from a course and receive the grade notation “W.”
April 3	Schedule of courses and seminars for next semester available online. All accounts must show a zero or positive balance for students to enroll and select a room for the fall semester.
April 8–18	Advising period.
April 22–24	Pre-enrollment for fall semester.
April 24	Pre-enrollment ends at 4 p.m.
May 3	Classes and seminars end.
May 3–4	Board of Managers meeting.
May 9	Final course and written honors examinations begin.
May 18	Course examinations end. Meal plan ends at dinner for all but seniors.
May 20	Honors written examinations end. Residence halls close to all but seniors at 8 a.m. (Non-seniors are expected to leave the College within 24 hours after their last examination.)
May 20–21	Senior comprehensive examinations.
May 23–25	Oral honors examinations.
June 1	Baccalaureate.
June 2	Commencement.
June 3	Residence halls close to seniors at 9 a.m.
June 7–9	Alumni Weekend.

College Calendar

2013

Fall Semester

Aug. 24–27	International student orientation.
Aug. 27	Residence halls open for new students.
Aug. 27–Sept. 1	Orientation and placement days.
Aug. 29	Advising begins. All-adviser meeting in morning. Individual advising begins in afternoon.
Aug. 30	Residence halls open for returning students. Computer preregistration for first-year and transfer students only.
Aug. 31	Registration follow-up meeting for students who need to make a change to their schedule.
Sept. 1	Meal plan starts at dinner for returning students.
Sept. 2	Classes and seminars begin.
Sept. 2	Labor Day—classes in session.
Sept. 13	Drop/add ends. Last day to delete a course from or add one to permanent registration.
Sept. 23–24	Board of Managers meeting.
Oct. 1	Final examination schedule available online.
Oct. 11	October break begins at end of last class or seminar.
Oct. 21	October break ends at 8:30 a.m.
Oct. 4–6	Garnet Homecoming and Family Weekend.
Nov. 6	Schedule of courses and seminars for next semester available online.
Nov. 8	Last day to declare CR/NC grading option. Last day to withdraw from a course and receive the grade notation “W.”
Nov. 11–21	Advising period.
Nov. 25–27	Pre-enrollment for spring semester.
Nov. 27	Pre-enrollment ends at 4 p.m. Thanksgiving break begins at end of last class or seminar.
Dec. 2	Thanksgiving break ends at 8:30 a.m.
Dec. 1	All accounts must show a zero or positive balance to enroll or select a room for spring semester.
Dec. 2–3	Board of Managers meeting.
Dec. 9–10	Monday follows the “Friday” class schedule, replacing the Friday of Thanksgiving break. Tuesday follows the “Thursday” class schedule, replacing the Thursday of Thanksgiving break.
Dec. 10	Classes end. Lottery for spring housing.
Dec. 13	Final examinations begin.
Dec. 13–21	Note: Final examinations are not rescheduled to accommodate travel plans. If you must make travel arrangements before the examination schedule is published (by Oct. 1), do not expect to leave until after finals.
Dec. 20	Seminars end.
Dec. 21	Final examinations end at noon. Residence halls close at 6 p.m. Meal plan ends at lunch.

College Calendar

2014

Spring Semester

Jan. 18	Residence halls open at noon.
Jan. 19	Meal plan starts at dinner.
Jan. 20	Classes and seminars begin.
	Martin Luther King Jr. Day—classes in session.
Jan. 31	Drop/add ends. Last day to delete a course from or add one to permanent registration.
Feb. 17–18	Board of Managers meeting.
March 7	Spring break begins at end of last class or seminar.
March 17	Spring break ends at 8:30 a.m.
March 28	Last day to declare CR/NC grading option. Last day to withdraw from a course and receive the grade notation “W.”
April 1	All accounts must show a zero or positive balance for students to enroll and select a room for the fall semester.
April 2	Schedule of courses and seminars for next semester available online.
April 7–17	Advising period.
April 13–15	Arts Weekend.
April 21–23	Pre-enrollment for fall semester.
April 23	Pre-enrollment ends at 4 p.m.
May 2	Classes and seminars end.
May 4–5	Board of Managers annual meeting.
May 8	Final course and written honors examinations begin.
May 17	Course examinations end.
	Meal plan ends at dinner for all but seniors.
May 19	Honors written examinations end.
	Residence halls close to all but seniors at 8 a.m. (Non-seniors are expected to leave the College within 24 hours after their last examination.)
May 19–20	Senior comprehensive examinations.
May 22–24	Oral honors examinations.
May 31	Baccalaureate.
June 1	Commencement.
June 2	Residence halls close to seniors at 9 a.m.
June 6–8	Alumni Weekend.

1 Introduction to Swarthmore College

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Swarthmore College, founded in 1864 by members of the Religious Society of Friends as a co-educational institution, occupies a campus of 425 acres of rolling wooded land in and adjacent to the Borough of Swarthmore in Delaware County, Pa. It is a small college by deliberate policy, with an enrollment of approximately 1,550 students. The Borough of Swarthmore is a residential suburb within half an hour's commuting distance of Philadelphia. College students are able to enjoy both the advantages of nearby rural settings and the opportunities offered by Philadelphia. The College's location also makes cooperation possible with three nearby institutions, Bryn Mawr and Haverford colleges and the University of Pennsylvania.

1.1 Objectives and Purposes

Swarthmore students are expected to prepare themselves for full, balanced lives as individuals and as responsible citizens through exacting intellectual study supplemented by a varied program of sports and other extracurricular activities. The purpose of Swarthmore College is to make its students more valuable human beings and more useful members of society. Although it shares this purpose with other educational institutions, each school, college, and university seeks to realize that purpose in its own way. Swarthmore seeks to help its students realize their full intellectual and personal potential combined with a deep sense of ethical and social concern.

1.2 Varieties of Educational Experience

Education is largely an individual matter, for no two students are exactly alike. The Swarthmore College curriculum is designed to give recognition to this fact and seeks to evoke the maximum effort and development from each student. The Swarthmore College Honors Program offers additional enriching and exciting intellectual experiences to students who choose to prepare for evaluation by examiners from other colleges and universities. Throughout the curriculum, options for independent study and interdisciplinary work offer opportunities for exploration and development over a wide range of individual goals. These opportunities typically include considerable flexibility of program choices from semester to semester, so that academic planning may be responsive to the emerging needs of students.

1.3 The Religious Tradition

Swarthmore College was founded by members of the Religious Society of Friends (the Quakers). Although it has been nonsectarian in

control since 1908 and Friends now compose a small minority of the student body, the faculty, and the administration, the College still values highly many of the principles of that society. Foremost among these principles is the individual's responsibility for seeking and applying truth and for testing whatever truth one believes one has found. As a way of life, Quakerism emphasizes hard work, simple living, and generous giving as well as personal integrity, social justice, and the peaceful settlement of disputes. The College does not seek to impose on its students this Quaker view of life or any other specific set of convictions about the nature of things and the duties of human beings. It does, however, encourage ethical and religious concern about such matters and continuing examination of any view that may be held regarding them.

1.4 Tradition and Change

A college draws strength from tradition and energy from the necessity of change. Its purposes and policies must respond to new conditions and new demands. By being open to change, Swarthmore tries to provide for its students, by means appropriate to the times, the standard of excellence it has sought to maintain from its founding.

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The primary educational resources of any college are the quality of its faculty and the spirit of the institution. Financial as well as physical resources play an important supportive role.

2.1 The Endowment

The educational resources at Swarthmore College have been provided by gifts and bequests from many alumni, foundations, corporations, parents, and friends. In addition to unrestricted gifts for the operating budget, these donors have contributed funds for buildings, equipment, collections of art and literature, and permanently endowed professorships, scholarships, awards, book funds, and lectureships. Their gifts to Swarthmore have not only provided the physical plant but also have created an endowment fund of \$1.51 billion at market value on June 30, 2011. Swarthmore is ranked among the highest in the country in endowment per student. Income from the endowment during the academic year 2010–2011 contributed approximately \$29,955 to meet the total expense of educating each student and provided about 37 percent of the College's operating revenues.

The College's ability to continue to offer a high quality of education depends on continuing voluntary support. Swarthmore seeks additional gifts and bequests for its current operations, its permanent endowment, and its capital development programs to maintain and strengthen its resources. The vice president in charge of development will be pleased to provide information about various forms of gifts: bequests, outright gifts of cash or securities, real estate or other property, and deferred gifts through charitable remainder trusts and life-income contracts in which the donor reserves the right to the annual income during his or her lifetime.

2.2 Libraries

The library is an active participant in the instructional and research program of the College. The primary function of the library is to support the teaching mission of the College by acquiring and organizing collections in a variety of print, digital, and other formats and by instructing students in the effective use of the library and its collections. Although the library's collections are geared primarily toward undergraduate instruction, the scope, nature, and depth of student and faculty research require a greater quantity of source materials than is typically found in undergraduate libraries. Additional needs are met through interlibrary loan, document delivery, and other cooperative arrangements.

Swarthmore, Haverford, and Bryn Mawr colleges link their library collections through Tripod (their shared, online catalog). Tripod, as well as other network information sources, can be accessed online through the library's home page at www.swarthmore.edu/library. The Tri-College Library Consortium takes advantage of a long history of cooperation and a unified, online catalog to work toward building a research-quality collection from the combined holdings of these three strong liberal arts colleges.

Reference service is often where research begins. Reference librarians guide patrons in formulating research strategies and in accessing the information and materials contained in the library's vast electronic and print collections. The library provides a considerable digital collection of electronic journals in all disciplines and of citation and full-text research databases that support access to historical, statistical, visual, and bibliographic information. The ever-growing amount of online resources has created a variety of new library services, including Live Help, an online "chat" reference service. The library also provides direct curricular support through extensive print and electronic reserve readings and honors collections.

Swarthmore College library holdings amount to approximately 900,000 volumes with some 15,000 volumes added each year. The College participates in the Federal and Pennsylvania Depository Library Program and selects those government documents most appropriate to the needs of the curriculum and the public and catalogs them in Tripod. The library also houses an extensive interdisciplinary audiovisual collection, including 12,000 videos more than 17,000 classical and jazz music recordings, and 1,400 spoken-word recordings of dramatic and poetic literature. The video collection includes classic U.S. and foreign films as well as educational, documentary, and experimental films.

The collections are housed in three libraries.

The Thomas B. and Jeannette L. McCabe Library is the center of the College library system and is home to the major portion of the collections, extensive public computing resources, a wide variety of reading and study areas, and a video classroom.

The Cornell Library of Science and Engineering in the Science Center houses 60,000 volumes and serves the curricular and research needs of students and faculty in the sciences.

The Underhill Music and Dance Library contains 20,000 books on music and dance as well as the sound recordings mentioned earlier. It provides a wide variety of listening and viewing facilities, which overlook the Crum Woods. Small collections of relevant materials

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are located in the Black Cultural Center and the Beit Midrash located in the Bond Lodges.

2.2.1 Special Library Collections

The College library contains certain special collections: the *Private Press Collection*, representing the work of more than 750 presses, an exemplary collection of “book arts” and artists’ books; *British Americana*, accounts of British travelers in the United States; the works of English poets Wordsworth and Thomson bequeathed to the library by Edwin H. Wells; the works of Seamus Heaney, winner of the Nobel Prize for Literature, 1995; the *W.H. Auden Collection* commemorating the English poet who taught at Swarthmore in the mid-1940s; and the *Bathe Collection* of the history of technology donated by Greville Bathe.

Within the McCabe Library building are two special libraries that enrich the academic life of the College:

The Friends Historical Library, founded in 1871 by Anson Lapham, is one of the outstanding collections in the United States of manuscripts, books, pamphlets, and pictures relating to the history of the Society of Friends. The library is a depository for records of Friends Meetings belonging to Baltimore, New York, Philadelphia, and other Yearly Meetings. More than 10,000 record books, dating from the 1670s until the present, have been deposited. Additional records are available on microfilm.

The collection includes materials on subjects of Quaker concern such as abolition, Indian rights, utopian reform, and the history of women’s rights. Notable among the other holdings are the Whittier Collection (first editions and manuscripts of John Greenleaf Whittier, the Quaker poet), the Mott manuscripts (more than 500 letters of Lucretia Mott, antislavery and women’s rights leader), and the Hicks manuscripts (more than 400 letters of Elias Hicks, a prominent Quaker minister). More than 43,000 volumes are in the library’s collection of books and pamphlets by and about Friends. More than 200 Quaker periodicals are currently received. The library also has an extensive collection of photographs of meetinghouses and pictures of representative Friends and Quaker activities as well as a number of oil paintings, including *The Peaceable Kingdom* by Edward Hicks. It is hoped that Friends and others will consider the advantages of giving to this library any books and family papers that may throw light on the history of the Society of Friends. Visit the website www.swarthmore.edu/fhl.xml.

The Swarthmore College Peace Collection is of special interest to research students seeking records of the peace movement. The records of the Women’s International League for Peace and Freedom and the personal papers of Jane Addams of Hull-House, Chicago, formed the

original nucleus of the Collection (1930). Over the years, other major collections have been added including the papers of Devere Allen, Emily Greene Balch, Julien Cornell, Homer Jack, A.J. Muste, Lawrence Scott, John Nevin Sayre, William Sollmann, E. Raymond Wilson, and others as well as the records of the American Peace Society, A Quaker Action Group, Center on Conscience and War, Central Committee for Conscientious Objectors, Fellowship of Reconciliation, Friends Committee on National Legislation, The Great Peace March, Lake Mohonk Conferences on International Arbitration, National Council for Prevention of War, SANE Inc., United for Peace and Justice, War Resisters League, Women Strike for Peace, World Conference of Religion for Peace, and many others. The Peace Collection serves as the official repository for the archives of many of these organizations. The Peace Collection also houses more than 12,000 books and pamphlets over 3,000 periodical titles, more than 15,000 linear feet of manuscripts, over 50,000 photographs and other images, thousands of audio and video recordings, and memorabilia. Periodicals are currently received from 22 countries. The comprehensive website www.swarthmore.edu/library/peace describes the archival holdings and resources.

2.3 Information Technology Services

Information Technology Services provides technology resources to support the instructional mission and the residential aspects of the College, and the services are available to all faculty, registered students, and College staff members.

The College provides a robust technology infrastructure. All classrooms are equipped with presentation systems. All campus buildings are connected by both wired and wireless networks. Telephone and email services are provided to all students, faculty, and staff members.

Shared computers and printers are available for student use in residence halls, libraries and various public spaces around campus.

Computer lab/classrooms are located in Trotter and the Science Center, plus there are department-based labs across campus. The Media Center in Beardsley gives faculty and students a place to try out new technology and create presentations and multimedia for their courses or extra-curricular activities. Music composition stations are available in the music library, and language study is supported by the facilities of the Language Resource Center in Kohlberg.

Software for academic use, such as SPSS, ArcGIS, and Mathematica, as well as software

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for multimedia development, is available on public computers. Some academic software is available for download by the College community and the College Bookstore sells a variety of software at reasonable prices.

Faculty, staff and students may seek computer assistance through the Help Desk by emailing help@swarthmore.edu.

2.4 Communications

The Communications Office coordinates strategic communications efforts at the College, particularly those relating to admissions, advancement, Swarthmore's web presence, and media relations. In collaboration with other College offices, the Communications Office leads the development and implementation of an overall web strategy for Swarthmore. The office also leads crisis communications efforts at the College, in close collaboration with a team of partners across campus.

The Communications Office produces a broad range of print and online materials for the College community. A selection includes the quarterly *Swarthmore College Bulletin*, the annual college calendar, and the Sw@tNews email newsletter. News about Swarthmore newsmakers, campus activities, and special events are available on the College's website (www.swarthmore.edu), which also features a rich variety of videos, podcasts, blogs, and faculty experts. The Communications Office also maintains the College's official social media presence on Facebook, YouTube, Flickr, iTunes, and Twitter.

The Communications Office maintains a set of standards for print and web publications, including a College design guide, a College style guide, and the appropriate use of the College logo. The office also manages any film requests that come into campus.

Communications Office staff members provide editorial, photographic, graphic design, print-production, digital storytelling, and web content support services to administrative offices and academic departments across campus, either directly or in working with outside vendors to produce exceptional products.

2.5 Physical Facilities

When Swarthmore College opened in fall 1869, it consisted of one building—Parrish Hall—set on farmland and serving 199 students. Today, the College encompasses more than 40 buildings used by approximately 1,500 students on 425 acres.

The College provides an impressive range of modern facilities for students' intellectual growth, cultural enrichment, and physical and social development. At the same time, it

maintains an intimate, pedestrian campus exemplifying the concept of academic study in an idyllic setting.

2.5.1 Intellectual Growth

Parrish Hall, the original College building, still lies at the heart of the campus with classroom buildings clustered around it. Parrish is the administrative and social center of the campus. Admissions, the Registrar's Office, the President's Office, and Dean's Office share space with the Financial Aid Office, Career Services, numerous student groups, and two floors of student residences. The second oldest building on campus, *Trotter Hall*, was renovated in 1997. Today, Trotter Hall respects the past but embraces modern technology and design, providing the space for the history, political science, and classics departments; the Center for Social and Policy Studies; programs in Latin American studies, peace and conflict studies, interpretation theory, gender and sexuality studies, black studies, and Asian studies; the Writing Center; and several classrooms and seminar rooms. At the center of the building is the *Table Atrium*, with student lounges on each floor. Views from this building overlook the Rose Garden to the south and the Nason Garden and Outdoor Classroom to the north.

Kohlberg Hall, completed in 1996, features spaces for use by the entire College community on the ground floor, including a lounge complete with a coffee bar and fireplace; the Scheuer Room, a popular place for lectures and gatherings; and the Cosby Courtyard, a dramatic outdoor space with stone seating walls around a lawn that doubles as an outdoor classroom. On the upper two floors are modern classrooms and intimate seminar rooms, a language resource center, and faculty offices. Home to the Modern Languages and Literatures, Economics, and Sociology and Anthropology departments, Kohlberg Hall demonstrates that a new building with award-winning architectural design can be integrated into an established campus.

Next door to Kohlberg lies the *Lang Performing Arts Center*, home to the English Literature and Theater departments and the programs in dance and film and media studies. In addition to two theaters and two dance studios, classrooms and offices are found on the second and third floors.

Hicks, Beardsley, and Pearson halls are clustered together on the north end of the academic campus, forming with Trotter Hall a quadrangle around the Nason Garden. Hicks is home to the Engineering Department and contains laboratories, with several equipped for computer-assisted and controlled experimentation. Beardsley, renovated in 1990,

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houses the Art Department and Information Technology Services. Pearson, renovated in 1998, is home to the Linguistics, Educational Studies, and Religion departments. Completing the cluster of north campus academic buildings is *Papazian Hall*, which houses the Psychology and Philosophy departments.

The *Science Center*, completed in 2004, physically links the departments of Biology, in Martin Hall, Chemistry and Biochemistry, Computer Science, Mathematics and Statistics, Physics and Astronomy, and the Cornell Science and Engineering Library to foster interaction and exchange among faculty and student scientists. The center offers the 80-seat Cuniff Lecture Hall, a 120-seat auditorium, and the Eldridge Commons area. The project was designed and constructed using criteria developed by the U.S. Green Building Council to produce a sustainable design providing opportunities for education about the environment and environmental responsibility. In 1999, the *Martin Greenhouse* was renovated to support a broader research program.

Lang Music Building, another award-winning building on campus, is home to the Music and Dance Department and the Underhill Library.

McCabe Library, the intellectual heart of campus, is the College's main library, and houses the national repository of the Society of Friends.

The Lang Center for Civic and Social Responsibility, at 3 & 5 Whittier Place, is an incubator for student-directed projects in civic engagement, public service, advocacy, and social action.

Sproul Observatory, with its 24-inch visual refracting telescope, was the center of fundamental research in multiple star systems. A 24-inch reflecting telescope on Papazian Hall is used for solar and stellar spectroscopy. In 2009, a 24-inch computerized telescope was installed in the *Peter van de Kamp Observatory* in the Science Center, providing state-of-the-art observing capabilities.

In the management, design, and construction of all physical facilities, the College recognizes the importance of employing environmentally sound practices and acknowledges its commitment to current and future societies. An example of Swarthmore's commitment to sustainability is the biostream bed, located between McCabe Library and Willets Hall and designed to filter runoff from upper-campus building roofs. More information is available at www.swarthmore.edu/sustainability.

Housed in *Trotter Hall*, the *Center for Social and Policy Studies* is an interdisciplinary applied research and policy initiative at the College. Established in 1972, the center undertakes and supports research addressing the

complex, dynamic, and compelling needs of inner-city communities, particularly the interplay between poverty and community development in the neighboring community of Chester. In addition, the center supports POLS 70: Politics of Punishment and POLS 106: The Urban Underclass and Urban Policy.

For students, the center attempts to tie academic learning to real-world problem solving and provides a rich hands-on experience in the broad field of social and public policy. Through their research, education, outreach, and advocacy activities, students have an opportunity to put their convictions into practice as they work with residents in the Chester community. The center's faculty director is Associate Professor of Political Science Keith Reeves '88.

2.5.2 Cultural Enrichment

The Lang Music Building, opened in 1973, contains a concert hall which seats 425 while providing an expansive view into the Crum Woods. It also is home to the Daniel Underhill Music and Dance Library, classrooms, practice and rehearsal rooms, and an exhibition area. It is the central facility for the Music Department and for musical activities at the College.

Greatly enhancing performance venues, the *Eugene M. and Theresa Lang Performing Arts Center* (LPAC) opened in 1991. The building contains *Pearson-Hall Theatre*, with a seating capacity of 825. The theater can be divided with a 40-ton movable soundproof wall, which is raised and lowered hydraulically. When the wall is raised, the space may be used simultaneously as a cinema seating more than 300 and a theater space of about equal seating capacity. The stage of the theater may also be transformed from its traditional configuration into a thrust stage.

The Frear Ensemble Theatre on the lower level of the LPAC is another, more intimate theater, a "black box" that serves as an experimental and instructional studio as well as the *Patricia Wityk Boyer Dance Studio* and the *Troy Dance Lab*. This building also provides an elegant facility for changing art exhibits, student art exhibitions, and a display of holdings of Swarthmore College's permanent art collection in its *List Art Gallery*.

2.5.3 Physical Development

The College maintains about 80 acres of playing fields around the academic heart of the campus to support a wide range of sports, including rugby, field hockey, lacrosse, soccer, softball and baseball. Track sports are supported by both an outdoor track around the *Clothier Field* and indoor track in the *Lamb-Miller Field House*, which also provides indoor basketball courts. Next to the field house are the *Squash Courts* building and *Ware Pool*, with a

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50-meter pool. Twelve outdoor tennis courts are supplemented with the *Mullan Tennis Center*, which houses indoor tennis courts and a fitness pavilion. Ample open lawn areas, an integral part of the Swarthmore College campus, accommodate and inspire a range of informal and spontaneous physical activity from Frisbee throwing to water sliding.

2.5.4 Social Development

Residence hall rooms are assigned by a lottery. All students have private telephone and computer hookup capabilities in their rooms. All halls have common lounges for socializing, and Swarthmore's *Sharples Dining Hall* provides an impressive single dining space, ensuring that students have the opportunity to interact regularly at mealtimes. Small dining rooms within the dining hall are frequently used for special-interest groups such as language discussion groups.

Other student activity and organization space on campus includes the Parlors, a student lounge, and student activities offices in *Parrish Hall*; *Tarble in Clothier*, with a snack bar, game room, the College Bookstore, a large all-campus space used for dances and other events and *Paces*, a student coffeehouse; the *Intercultural Center*, with both private organization space and a large meeting room for collective events; the *Black Cultural Center*; *Bond Hall*, home to the religious advisers and religious organizations; the *Kitao Gallery*, a student-run art gallery; *Olde Club*, a party/concert venue; the *Women's Resource Center*; and two fraternity houses.

2.5.5 Scott Arboretum

The College property comprises 425 acres, including a large tract of woodland and the valley of Crum Creek. Much of this tract has been developed as a horticultural and botanical collection of trees, shrubs, and herbaceous plants through the provisions of the Scott Arboretum, established in 1929 by Mrs. Arthur Hoyt Scott and Owen and Margaret Moon as a memorial to Arthur Hoyt Scott of the Class of 1895. The plant collections are designed to afford examples of the better kinds of trees and shrubs that are hardy in the climate of eastern Pennsylvania, are suitable for planting by the average gardener, and to beautify the campus. All collections are labeled and recorded. Exceptionally fine displays include hollies, flowering cherries, conifers, crabapples, magnolias, tree peonies, lilacs, rhododendrons, azaleas, hydrangeas and witch hazels. Specialty gardens include the Terry Shane Teaching Garden, the Theresa Lang Garden of Fragrance, the Dean Bond Rose Garden, the Isabelle Bennett Cosby '28 Courtyard, the Nason Garden, the Metasequoia Allée, the Harry Wood Courtyard Garden, and the West House

Garden. Many interested donors have contributed generously to the collections, and the arboretum is funded primarily by restricted endowment funds with a combined market value of \$27 million as of June 30, 2011.

The arboretum offers educational horticulture programs to the general public and Swarthmore students. These workshops, lectures, and classes are designed to cover many facets of the science/art called gardening. Tours are conducted throughout the year for College people and interested public groups. In 2009 the arboretum built the Wister Education Center and Greenhouse (5,200 square feet) to better fulfill its educational mission. This facility has been awarded Gold LEED certification (Leadership in Energy and Environmental Design).

Aiding the arboretum staff in all its efforts, are the Associates of the Scott Arboretum. This membership organization not only provides financial support but also assistance in carrying out the myriad operations that make up the arboretum's total program, such as plant propagation, public lectures, workshops, publications, and tours to other gardens. More than 100 volunteer Arboretum Assistants aid in campus maintenance on a regular basis. Student memberships are available and the arboretum provides interesting and educational job opportunities for students. The arboretum's newsletter, *Hybrid*, publicizes its activities and provides up-to-date information on seasonal gardening topics. Maps for self-guided tours and brochures of the arboretum plant collections are available at the Scott offices, 610-328-8025, located in the Cunningham House.

The arboretum conducts applied research on ornamental plants and serves as a test site for three plant evaluation programs: the Gold Medal Award of Garden Merit through the Pennsylvania Horticultural Society, the performance of hollies through the Holly Society of America, and the National Boxwood Trial Program. It holds three recognized North American Plant Collections: hollies, magnolias, and oaks.

The Scott Arboretum was accredited by the American Association of Museums in 1995 and re-accredited in 2006, signifying its professional standards of operation as a museum of living plants. For more information, visit www.scottarboretum.org and sign up for the "Garden Seeds Blog."

2.6 Special Funds and Lectureships

The Catherine G. '72 and Ernest B. Abbott '72 Partners in Ministry Endowment was created in recognition of the importance of a distinctive

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ecumenical program of spiritual nurture serving the entire Swarthmore College community. Income from the Abbott endowment is distributed to Partners in Ministry to help provide for the compensation of the religious adviser and supporting staff of the Swarthmore Protestant community.

The Mary Albertson Lectureship in Medieval Studies was established in 1987 with gifts from George Cuttino '35 and former students, colleagues, and friends. Mary Albertson joined the Swarthmore faculty in 1927 and served as chair of the History Department from 1942 until her retirement in 1963. She was responsible for expanding the history curriculum to include studies on Russia, the Far and Near East, Africa, and Latin America. Mary specialized in English medieval history. She died in May 1986.

The Jesse and Maria Aweida Endowment for the Support of Arabic Language Instruction was established in 2006 by Jesse and Maria Aweida, members of the Class of 1956.

The Barnard Fund was established in 1964 by two graduates of the College, Mr. and Mrs. Boyd T. Barnard of Rosemont, Pa. The fund has been augmented by the 50-year class gifts from the classes of 1917 and 1919 and other friends. The income from the fund may be used for any activity that contributes to the advancement of music at the College. It has been used for concerts on the campus, for the purchase of vocal and orchestral scores and other musical literature, and to provide scholarships for students in the Music Department who show unusual promise as instrumentalists or vocalists.

The Peter B. Bart '54 Endowment was established in 2005 to support the Film and Media Studies Program at Swarthmore College.

The Albert H. Beekhuis Music Fund was created in 1989 by a generous bequest of Mr. Beekhuis, neighbor, friend, and patron of Swarthmore music. The fund supports the acquisition and maintenance of musical instruments and brings musical performers to the College.

The Bloom Discretionary Fund Endowment was established by Ira T. Wender '45 in honor of President Alfred H. Bloom. This fund is discretionary under the direction of the president.

The Al and Peggy Bloom Endowment for Financial Aid for International Students and for Faculty Support was established in 2005. This endowment aims to help prepare students to identify and advance common purpose in a global world by providing financial support to international students at Swarthmore, and by supporting relevant faculty efforts in any discipline or across disciplines.

The Alfred H. Bloom Jr. and Martha B. Bloom Memorial Visiting Scholar Fund is the gift of Frank Solomon Jr. '50 in honor of the parents of Alfred H. Bloom. It brings visiting scholars to campus at the discretion of the president.

The Patricia Boyer Music Fund was created in 1989. Income from the Boyer fund supports the Dance Program.

The Richard B. Brandt Fund was established in 1986 by Phillip J. Stone '62 in honor of Richard B. Brandt, a member of the Philosophy Department from 1937 to 1964. The fund supports visiting speakers chosen by the department.

Brest Family General Endowment was established in 2004 by Iris Lang Brest '61, Paul Brest '62, Hilary Brest Meltzer '86, and Jeremy Brest '90 to further the objectives and purposes of Swarthmore College. The income of the Brest Endowment is for unrestricted use.

The Brown Family Travel Fund, established in 2011 by Vera Grant Brown '70 and Frank I. Brown '68, recognizes and honors the special contribution that parents and family members have played in helping their student prepare for college and come to Swarthmore. It provides support for families to travel to landmark events or programs involving their student that would not be possible otherwise due to cost of transportation and lodging. These might include Commencement exercises, athletic competitions, performing arts productions, academic presentations and the like. The use of the fund is under the direction of the Dean's Office.

The Phillip A. Bruno Fine Arts Endowment was created by Phillip A. Bruno in 1988. The fund supports the acquisition of artwork for the Swarthmore College collections.

The William J. Carter '47 Religious Harmony Fund was established in 2011 by a bequest from William J. Carter '47. The fund's purpose is to encourage and promote understanding, harmony and respect among the various religions of the world.

The Barbara Weiss Cartwright Fund for Social Responsibility was created in 1993 by a gift from Barbara W. Cartwright '37 and Dorwin P. Cartwright '37. The fund supports new or existing programs that encourage involvement in addressing societal problems through projects initiated by the College or created by current students. In addition, it will provide opportunities for faculty and students to participate in volunteer service projects linked to the academic program.

Wendy Susan Cheek '83 Memorial Fund for Gender and Sexuality Studies. Established in 1998 by Aimee Lee and William Francis Cheek, the fund supports student and/or programming needs of the Gender and

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Sexuality Studies Program, including the capstone seminar for honors and course students. The fund shall be spent at the direction of the gender and sexuality studies coordinator.

The Cilento Family General Endowment Fund was established in 2002 by Alexander P. Cilento '71 to support the general objectives of the College. The income is unrestricted.

The Cilento Family Information Technology Fund was established in 2002 by Alexander P. Cilento '71 as an expression of gratitude and appreciation for the Engineering Department at Swarthmore College. The fund supports teaching innovations in information science, with preference for computer science, engineering, and related disciplines. The Provost's Office administers the fund.

The Classics Endowment was established in 2005 and, in consultation with the Provost's Office, shall be used to support classics instruction directly.

The Richard W. Conner '49 Partners in Ministry Fund was created in spring 2000 by Richard W. Conner '49 to establish a matching challenge grant program benefiting Partners in Ministry in recognition of the importance of an ecumenical program of spiritual nurture serving the diverse faith traditions of the entire Swarthmore College community.

The George R. Cooley Curatorship was established in 1986. The Cooley endowment supports the curatorship of the Swarthmore College Peace Collection.

The William J. Cooper Foundation provides funding for a varied program of lectures, exhibits, and concerts, which enriches the academic work and cultural experience of the College and the community. The foundation was established by William J. Cooper, a devoted friend of the College whose wife, Emma McIlvain Cooper, served as a member of the Board of Managers from 1882 to 1923. It provides annual funds that are used "in bringing to the College eminent citizens of this and other countries who are leaders in statesmanship, education, the arts, sciences, learned professions and business, in order that the faculty, students and the College community may be broadened by a closer acquaintance with matters of world [interest]."

The Cooper Foundation Committee, composed of students, faculty members, and staff members, works with members of all campus constituencies to arrange lectures, exhibitions, and performances of College-wide interest as well as to bring to the College speakers of note who will remain in residence long enough to enter into the life of the community. In the past, some speakers have been invited with the understanding that their lectures would be

published under the auspices of the foundation. This arrangement has produced 18 volumes.

The Bruce Cratsley '66 Memorial Fund was created in 1998 and supports lectures about photography and exhibitions.

The Carley Cunniff '72 Paul Hall Residence Fund was established to honor this member of the Board of Managers who died in January 2005.

The Michael J. Durkan Memorial Fund was established by family and friends of Michael J. Durkan, librarian emeritus, to support library collections and to help bring Irish writers to campus.

The Elizabeth Pollard Fetter Chamber Music Fund, endowed by Frank W. Fetter '20, Robert Fetter '53, Thomas Fetter '56, and Ellen Fetter Gille in memory of Elizabeth Pollard Fetter '25, subsidizes the private instrumental lessons of outstanding student string players at the College. Interested applicants should write to the director of the Fetter Chamber Music program and should plan to audition at the beginning of each semester.

The James A. Field Jr. Lectureship was established by Thomas D. Jones Jr. '53 and Vera Lundy Jones '58 in memory of James Field, professor of history from 1947 to 1984, to support lectures by visiting scholars on the history of the United States.

The James A. Field Jr. Memorial Fund was established by family and friends of James A. Field Jr., Clothier Professor Emeritus of history, to support library collections.

The Tariq Q. Fischer Endowed Islamic Studies Fund was created in 2005 by Paul and Asma Fischer, parents of Tariq Q. Fischer '08, in his memory, to support the development of an Islamic Studies Program.

The Swarthmore College Folk Dance Club Endowment was established in 2010. This fund supports activities of the Swarthmore College Folk Dance Club.

The Lee Frank Memorial Art Fund, endowed by the family and friends of Lee Frank '21, sponsors each year a special event in the Art Department: a visiting lecturer or artist, a scholar or artist in residence, or a special exhibit.

The Gertrude S. Friedman Research Fund was established in 1992 to support travel and research of biology faculty members with preference to those studying in the area of physiology and related subspecialties. Grants are awarded at the discretion of the chair of the Biology Department.

The Garnet Athletics Endowment was created in 2002 by an anonymous donor to support the Athletics Program at Swarthmore College. The fund supports expenses associated with

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introducing prospective scholar-athletes to Swarthmore College, including travel costs and the production of publications promoting the Athletics Program at the College.

The Mary Josephine Good '70 Endowment was created in her memory by her father, Richard A. Good. The fund was created in 2004 and supports the Partners in Ministry program at Swarthmore College.

The David R. Goodrich '71 Endowment for Islamic Studies was established in 2003 to support the Islamic Studies Program at Swarthmore College. The Provost's Office administers the fund.

The Donald J. Gordon Art Fund was established in 1998 by a gift from his children and their spouses on the occasion of his 70th birthday and the 50th anniversary of his graduation from Swarthmore College. The fund supports visiting artists.

The Harry D. Gotwals Fund was established in 1997 in memory of the distinguished service of Harry D. Gotwals as vice president for development, alumni, and public relations from 1990 to 1997. The fund supports the professional development of members of the division.

The Merritt W. Hallowell '61 Career Services Fund was established in 2002 by Merritt Hallowell to support the College's career services program and initiatives, including but not limited to student career exploration, vocational counseling, identification of skills, interests, and values to develop an individual's personalized career options; electronic and print resources; alumni networking and mentoring; and extern opportunities. The Career Services Office administers the fund.

The Halpern Family Foundation Engineering Design Fund was established in 2007 by Michael Halpern '68 and Christine Grant '69. This fund supports work by students on interdisciplinary projects with socially relevant purposes, which include design engineering principles as well as aesthetics and client needs.

The Hayward Family Fund was established by Priscilla Hayward Crago '53 in honor of her parents, Sumner and Elizabeth Hayward, to receive designated life income gifts made by the donor since 1991 and to accommodate additional gifts anticipated over the donor's lifetime and from her estate. The income from the fund provides support for the faculty at Swarthmore College.

The Marjorie Heilman Visiting Artist Fund was established by M. Grant Heilman '41 in memory of Marjorie Heilman to stimulate interest in art, particularly the practice of art, on campus.

The James C. Hormel '55 Endowment for Public Policy and Social Change was established by James Hormel '55 to support faculty in the Political Science Department.

The James C. Hormel '55 Endowment for Student Services was established by James Hormel '55 to support staffing and programs related to student services and activities, including student involvement in volunteering and programs to encourage greater understanding of, sensitivity to, and incorporation into the great society of differences in culture, sexual orientation, or race.

The William I. Hull Fund was established in 1958 by Mrs. Hannah Clothier Hull, Class of 1891, in memory of her late husband. Dr. Hull was a professor of history and international law at Swarthmore College for 48 years. The fund enables the College to bring a noted lecturer on peace to the campus each year in memory of Dr. and Mrs. Hull, who were peace activists.

The David Kemp Endowment was created in 2006 by Giles '72 and Barbara Kemp and provides support for David Kemp Hall, which is named for Gil's grandfather.

The Kyle House Endowment was created by a gift from Elena '54 and Fred '54 Kyle and is used for the upkeep and expenses of a house on Whittier Place currently used as a residence hall.

The Jonathan R. Lax Fund, created by his bequest in 1996, supports an annual Lax Conference on Entrepreneurship and Economic Anthropology. Jonathan Lax '71 was class agent and a reunion leader. His parents, Stephen '41 and Frances Lax, and brothers Stephen (Gerry) Lax Jr. '74 and Andrew Lax '78 have been actively involved at the College.

The Genevieve Ching-wen Lee '96 Memorial Fund was established in her memory by family and friends and recognizes the importance of mutual understanding and respect among the growing number of ethnic groups in our society. The fund supports an annual lecture by a prominent scholar of Asian American studies and/or an annual award to two students to assist in projects pertaining to Asian American studies.

The List Gallery Exhibit Fund, established through the generosity of Mrs. Albert List, supports exhibits in the List Gallery of the Eugene M. and Theresa Lang Performing Arts Center.

The Lorax Fund for Environmental Sustainability was established in 2007 by a grant from the Schwab Charitable Fund as recommended by Naomi Zikmund-Fisher '91. The fund is used to support the activities that

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move Swarthmore College and its community toward a more environmentally sustainable future (e.g. the reduction or offsetting of carbon or other greenhouse gas emissions, innovative replacements of less than efficient technologies, systems, and devices, etc.). The fund is administered by the Office of Facilities and Services.

The Judy Lord Endowment was established in 2004 by anonymous donors who are friends of the College. The endowment memorializes Judy Lord's enthusiasm and community spirit and is a reward for hard work and contributions to Swarthmore College life. Earnings from the Judy Lord endowment are awarded to academic departmental administrative assistants with tenure of 10 or more years at the College.

The Lovelace Family Endowment was established in 2004 to further the objectives and purposes of Swarthmore College. The income is unrestricted.

The Caro Elise Luhrs '56 Business and Leadership Endowment was established by Caro Elise Luhrs '56 in 2011. This fund better prepares students for assuming leadership positions in whatever liberal arts and science fields they may go into by giving them grounding in basic business skills. Activities supported by this fund will foster strong communication skills, inspire new ways to develop innovative solutions and encourage entrepreneurship thought and action.

The Julia and Frank L. Lyman '43 Partners in Ministry Endowment was created in February 2000 in recognition of the importance of a distinctive ecumenical program of spiritual nurture serving the entire community of Swarthmore College. Income from this endowment will help provide for the compensation of the religious adviser and supporting staff of the Swarthmore Protestant Community.

The Isabel Gamble MacCaffrey '46 Library Endowment was established in 2010 by Wallace MacCaffrey in memory of his wife. The fund is used to support the library program.

The Lucy Bunzl Mallan '54 Faculty Leave Endowment was established in 2006 by Lucy Bunzl Mallan to recognize the importance of her Swarthmore College experience and classmates. This endowment will be used by the provost to support faculty leaves.

The Penelope Mason Endowment for Asian Studies was created via the estate of Penelope E. Mason '57. The fund supports courses taught in the departments of art, modern languages, economics, history, music and dance, political science, religion, and sociology/anthropology.

The Chica Maynard '48 Cherry Border Fund was established in 2009 by the Class of '48, friends and family in memory of Carolien

"Chica" Powers Maynard '48 to honor her ties and over a century of family ties to Swarthmore College. This fund supports maintenance, upkeep, and enhancements to the Cherry Border of the Scott Arboretum which was started in April 1931 with a gift from Mrs. Allen K. White, Class of 1894, in recognition of her daughter, Carolien White Powers '22 and the "whisper bench" which serves as a memorial to Carolien Powers '22. Uses for the income of this fund will be determined by the Scott Arboretum.

The Thomas B. McCabe Memorial Fund was established with gifts from alumni and the McCabe Family to support an annual lectureship that brings to campus each fall individuals with distinguished careers in fields such as public service, business, government, education, or medicine.

The James H. Miller '58 Partners in Ministry Endowment was created in recognition of the importance of a distinctive ecumenical program of spiritual nurture serving the entire Swarthmore College community. Income from the Miller endowment is distributed to Partners in Ministry to help provide for the compensation of the religious adviser and supporting staff of the Swarthmore Protestant community.

The Margaret W. and John M. Moore Endowment was created in September 1999 via a life-income gift contract. Income provides research stipends for selected scholars using the resources of the Friends Historical Library and/or the Peace Collection at Swarthmore College.

The Paul Moses and Barbara Lubash Computer Science Fund was created to provide support for computer science students traveling to seminars and related events.

The Helen F. North Fund in Classics, established in 1996 by Susan Willis Ruff '60 and Charles F.C. Ruff '60 to honor the distinguished career of Helen F. North and her enduring impact on generations of Swarthmore students, is awarded to support the program of the Classics Department. At the discretion of the department, it shall be used to fund annually the Helen F. North Distinguished Lectureship in Classics and, as income permits, for a conference or symposium with visiting scholars; summer study of Greek or Latin or research in classics-related areas by students majoring in the field; or study in Greece or Italy in classics by a graduate of the department.

The Project Pericles Fund of the Board of Managers was created in 2005 to support student projects of significant dimensions. The endowment was contributed by the Board of Managers for administration by the Lang Center.

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The Theodore and Elizabeth Pierson Friend Fund for Islamic Studies was created in 2005 and is used to support the Islamic Studies Program at Swarthmore College.

The Promise Fund, established anonymously by an alumnus on the occasion of his graduation, is administered by The Cooper Foundation Committee. Income from the Promise Fund brings guest speakers, artists, and performers in music, film, dance, and theater who show promise of distinguished achievement.

The Mary Herndon Ravdin '50 Endowment for Partners in Ministry was established in memory of Mary Herndon Ravdin in 2008 by her husband, William D. Ravdin '50. This fund supports the Partners in Ministry program at Swarthmore College.

The Lucinda M. Lewis '70 and Sarah Reynolds '09 Mathematics Endowment was established in 2012 by Robert J. Reynolds. This fund supports visiting scholars to the department of mathematics and student participation in conferences. Recipient(s) will be chosen by the chair of the department of mathematics.

Jane Martin '39 Roberts and John Watts Roberts '39 Interdisciplinary Engineering Fund was established to support the engineering department with preference given to both sustainability projects and curriculum development for the purposes of fostering innovation at the interface between engineering and non-engineering disciplines.

The Edgar and Herta Rosenblatt Fund was created in 1967 and supports the work of the faculty at Swarthmore College.

The Ruach Endowment was created in 2000 to support Hillel activities on campus.

The Richard L. Rubin Scholar Mentoring Fund was established by Richard Rubin, a professor of political science and public policy at the College, in 2003. This fund supports the mentoring program, which the Dean's Office administers.

The Bernie Saffran Lecture Endowment was established in 2007 by students, colleagues, and friends as a tribute to this beloved and esteemed member of the College faculty. This fund is administered by the Economics Department and supports expenses associated with bringing exceptional speakers to campus.

The Sager Fund of Swarthmore College was established in 1988 by alumnus Richard Sager '73, a leader in San Diego's gay community. To combat homophobia and related discrimination, the fund sponsors events that focus on concerns of the lesbian, bisexual, and gay communities and promotes curricular innovation in the field of lesbian and gay studies. The fund also sponsors an annual three-day symposium. The fund is administered by a committee of women and men from the student body, alumni, staff,

faculty, and administration. In 2004, Richard Sager created an "internship" to provide funding for students in internships with nonprofit organizations whose primary missions address gay/lesbian/bisexual/transgender issues. The Lang Center for Civic and Social Responsibility administers the internship.

The Scheuer-Pierson Fund, established in 1978 by Walter and Marge Scheuer '48, supports the Economics Department.

The Schmelz Family Endowment was established in 2012 by John and Diane Schmelz. This fund supports the athletics program at Swarthmore College and activities and expenses associated with the women's basketball program, including training trips, winter break trips, and other program enhancing projects.

The Science Center Endowment Fund was established in 2003 with a gift from Peter Weinberger of the Class of 1964. Income from this endowment will be used to support the operations and maintenance of the Science Center.

The Science Center Support Endowment was established by numerous donors to support the operation of the renovated Science Center and related academic programs.

Harold E. and Ruth Caldwell Snyder Premedical Endowment Fund was established in 1988 by Harold Cincy Snyder '29 in appreciation for the education he and his beloved wife, Ruth Caldwell Snyder '31, received at Swarthmore College. The fund was fully endowed through a bequest in 1992 and supports a visiting lecturer in the medical profession with a preference for practitioners who treat each patient as a whole person.

The Gil and Mary Roelofs Stott Concert Fund was established in 1997 on the 25th anniversary of the Lang Music Building. The fund was created as an expression of deep affection for the Stotts by Eugene M. Lang, Class of 1938, to recognize their special artistic talents and all that they have meant to the Swarthmore community. Each year, a new musical composition will be commissioned by the College to be performed at an annual Gil and Mary Roelofs Stott Concert at which the Gil and Mary Roelofs Stott Resident Student Artist will perform.

The Mary and Gilmore Stott Honors Philosophy Seminar Endowment was created in 1998 by William G. Stott '75 and by Christopher Niemczewski '74. The fund supports a seminar offered by the Philosophy Department. It was established in honor of the parents of William G. Stott '75.

The Swarthmore Chapter of Sigma Xi Lecture Series brings eminent scientists to the campus under its auspices throughout the year. Local

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members present colloquia on their own research.

The Thatcher Fund provides individualized assistance to students with disabilities. The purpose of the fund is to enable such students to take full advantage of the academic and extracurricular life of the College and to make Swarthmore a desirable choice for prospective students with disabilities. The fund was established in 1997.

The Phoebe Anna Thorne Memorial Endowment was created by a Thorne family member in 1911. The endowment supports the faculty of Swarthmore College.

The Pat Trinder Endowment was established by alumni and friends of Patricia E. Trinder, a member of the career planning and placement office staff, to honor her many years of dedication and support to students. The endowment supports programs to advance career planning and placement at Swarthmore College. It specifically supports alumni participation in the recruiting, placement, and mentoring efforts for students.

The P. Linwood Urban Jr. Partners in Ministry Endowment was created in recognition of the importance of a distinctive ecumenical program of spiritual nurture serving the entire Swarthmore College community. Income from the Urban endowment is distributed to Partners in Ministry to help provide for the compensation of the religious adviser and supporting staff of the Swarthmore Protestant community.

The Benjamin West Lecture, made possible by gifts from members of the Class of 1905 and other friends of the College, is given annually on some phase of art. It is the outgrowth of the Benjamin West Society, which built up a collection of paintings, drawings, and prints, which are exhibited, as space permits, in the buildings on campus. The lecture was named for the American artist who was born in a house that stands on the campus and became president of the Royal Academy.

The Dan and Sidney West House Endowment was established in 2006 by Giles and Barbara Kemp to honor Vice President Dan C. West and his wife, Sidney Childs West. The income from this endowment will be used to support the maintenance, upkeep, and program expenses of the campus residence and the gardens of the vice president for development, alumni, and public relations, which also serves as guest quarters and an entertainment venue for campus visitors.

The Wister Memorial Endowment was established in 2000 by John C. and Gertrude Wister to support the Scott Arboretum.

Kenneth R. Wynn '74 Fund for Interdisciplinary Programs was created in 1998 to support interdisciplinary, language-based programs that embrace a more global view of language learning than traditional sources.

The Neil '80 and Beth Yelsey Endowment was established in 2004 to further the objectives and purposes of Swarthmore College. The income is unrestricted.

The Young Family Endowment was established in 2003 by James and Jacqueline Young, parents of Scott Young '06. The fund supports the Swarthmore College radio station, WSRN.

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Inquiries concerning admission and applications should be addressed to the Vice President and Dean of Admissions, Swarthmore College, 500 College Avenue, Swarthmore PA 19081-1390 or admissions@swarthmore.edu. Office telephone: (610) 328-8300 or (800) 667-3110.

3.1 General Statement

In the selection of students, the College seeks those qualities of character, social responsibility, and intellectual capacity that it is primarily concerned to develop. It seeks them not in isolation but as essential elements of the whole personality of candidates for admission. Selection is important and difficult. No simple formula will be effective. The task is to choose those who give promise of distinction in the quality of their personal lives, in service to the community, or in leadership in their chosen fields. Swarthmore College must choose its students on the basis of their academic achievement and commitment to intellectual inquiry as well as their individual future worth to society and of their collective contribution to the College.

It is the College's policy to have the student body represent not only different parts of the United States but also many foreign countries; public, independent, and religiously affiliated schools; and various economic, social, religious, ethnic, and racial backgrounds. The College is also concerned to include in each class the sons and daughters of alumni and members of the Society of Friends.

Admission to the first-year class is normally based on the satisfactory completion of a 4-year secondary school program. Under some circumstances, students who have virtually completed the normal 4-year program in 3 years will be considered for admission, provided they meet the competition of other candidates in general maturity as well as readiness for a rigorous academic program. Home-schooled students should make every effort to complete the application with information that is appropriate to their experience. It is useful to note that Swarthmore is looking for the same information about a candidate as is required from a student with more traditional secondary schooling. Students who have already completed a college degree, or higher, are not eligible for admission to Swarthmore College.

All applicants are selected on the following evidence:

1. Record in secondary school.
2. Recommendations from the school principal, headmaster, or guidance counselor, and from two academic teachers.
3. Standardized testing results for any one of the three following testing scenarios: The SAT

and any two SAT Subject Tests, the ACT with writing; the SAT and the ACT (with or without writing).

4. Applicants considering a major in engineering are strongly encouraged to take the SAT Math level 2 subject test.

5. A brief statement about why the student is applying to Swarthmore, a brief essay on a meaningful activity or interest, and a longer essay (subject specified).

6. Cocurricular and extracurricular activities.

Applicants must have satisfactory standing in school and standardized tests as well as strong intellectual interests. The College is also interested in strength of character, promise of growth, initiative, seriousness of purpose, distinction in personal and extracurricular interests, and a sense of social responsibility. The College values the diversity that varied interests and backgrounds can bring to the community.

3.2 Preparation

Swarthmore does not require a set plan of secondary school courses as preparation for its program. The election of specific subjects is left to the student and school advisers. In general, preparation should include the following:

1. Accurate and effective use of the English language in reading, writing, and speaking.
2. Comprehension and application of the principles of mathematics.
3. The strongest possible command of one or two foreign languages. The College encourages students to study at least one language for 4 years, if possible.
4. Substantial coursework in history and social studies; literature, art, and music; and mathematics and the sciences. Variations of choice and emphasis are acceptable, although some work in each of the three groups is recommended.

Those planning to major in engineering should present work in chemistry, physics, and 4 years of mathematics, including algebra, geometry, trigonometry, and calculus.

3.3 Applications and Examinations

Application to the College may be submitted through either the *Regular Decision* or one of the *Early Decision* plans. Applicants follow the same procedures, submit the same supporting materials, and are evaluated by the same criteria under each plan.

The *Regular Decision* plan is designed for those candidates who wish to keep open several different options for their undergraduate education throughout the admissions process.

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Applications under this plan will be accepted at any time up to the Jan. 1 deadline, but the application should be submitted as early as possible to create a file for the candidate to which supporting material will be added up to the deadline.

The *Early Decision* plans are designed for candidates who have thoroughly and thoughtfully investigated Swarthmore and other colleges and found Swarthmore to be an unequivocal first choice. On applying to Swarthmore College, Early Decision candidates may not file an early decision application at other colleges, but they may file early action/regular applications at other colleges with the understanding that these applications will be withdrawn upon admission to Swarthmore.

Any Early Decision candidate not admitted will receive one of two determinations: a deferral of decision, which secures reconsideration for the candidate among the Regular Decision candidates, or a denial of admission, which withdraws the application from further consideration. If one of these determinations is made, the applicant is free to apply to other institutions.

Application under any plan must be accompanied by a nonrefundable application fee of \$60 or fee waiver (which must be approved by the secondary school counselor). Timetables for the plans are the following:

Fall Early Decision

Application deadline Nov. 15

Notification of candidate by Dec. 15

Winter Early Decision

Application deadline Jan. 1

Notification of candidate by Feb. 15

Regular Decision

Application deadline Jan. 1

Notification of candidate by April 1

Candidate reply date May 1

Under certain circumstances, admitted students may apply in writing to defer their admission for 1 year. These requests must be received by May 1 and approved in writing by the dean of admissions, and students must confirm their plans for the year by June 1. The dean of admissions may choose to review other requests on a case-by-case basis. Students granted deferment may neither apply to nor enroll at another degree-granting college/university program.

Swarthmore College places strong emphasis on academic achievement and personal character. An offer of admission to Swarthmore College is dependent on a student maintaining his or her standard of academic achievement before

enrolling at the College. An offer of admission is also dependent on a student's continued demonstration of character and high standards for personal conduct. Lapses in either category may be grounds for rescinding an offer of admission.

For U.S. citizens and permanent residents applying as first-year or transfer students, admission to Swarthmore is determined without regard to financial need. See information concerning financial aid.

3.4 Interview

An admissions interview with a representative of the College is a recommended part of the first-year application process. Prospective first-year applicants should take the initiative in arranging for this interview. On-campus interviews are available to rising seniors from June through early December. Students are encouraged to complete the interview before submitting an application to the College. Those who can reach Swarthmore with no more than a half-day's trip are urged to make an appointment to visit the College for this purpose. Other students may contact the Admissions Office in the fall of their senior year to request a meeting with an alumni representative in their own area. The deadline to request an alumni interview is Dec. 1. Applicants for transfer may interview with an alumni representative. Transfer interviews are completely optional and may be requested in the winter and must be completed by the transfer deadline of April 1.

Arrangements for on-campus or alumni interviews can be made by writing to the Admissions Office or by calling (610) 328-8300 or (800) 667-3110. Requests for interviews may also be made through the admissions website.

3.5 Advanced Placement

Enrolled first-year students with special credentials may be eligible during the first semester for advanced placement (placement into courses with prerequisites) and/or credit toward graduation from Swarthmore (32 credits are required). All decisions are made on a subject-by-subject basis by the registrar in consultation with individual Swarthmore departments. Such credit is available only for examinations taken before matriculation at Swarthmore. Typically, special credentials consist of Advanced Placement (AP) examinations of the College Entrance Examination Board, higher-level examinations of the International Baccalaureate, certain other foreign certifications (such as British A-Levels or the German Abitur), or courses taken at another college. Every effort is made to place students at the appropriate level, but no

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department is required to give credit for work done elsewhere. Credit is denied or revoked if a student chooses to take a course at Swarthmore that the Swarthmore department says essentially repeats the work covered by the credit. Departmental AP-credit policies are posted on the registrar's website under "Policies."

In some cases, students may qualify for advanced standing and may become juniors in their second year. To qualify for advanced standing, a student must do satisfactory work in the first semester, obtain 14 credits by the end of the first year, intend to complete the degree requirements in 3 years, and signify this intention when she or he applies for a major during the spring of the first year.

Those students who wish to have courses taken at another college considered for either advanced placement or credit must provide an official transcript from the institution attended as well as written work (papers, examinations); syllabi; and reading lists in order that the coursework may be evaluated by the department concerned. Such requests for credit must be made within the first year at Swarthmore. Departments may set additional requirements. For instance, students may be required to take a placement examination at Swarthmore to validate their previous work.

3.6 International Admissions

The College is deeply committed to a strong international presence on campus. The application process is the same as for U.S. citizens and permanent residents of the United States with the following exceptions:

1. Admission is not need-blind. Students must submit additional financial documentation to the Financial Aid Office. Applying for financial aid places the student in the most selective subgroup of the total application pool regardless of the parental contribution.
2. Demonstrated proficiency in English is required of those for whom English is not their first language. This may be in the form of a standardized test for non-native speakers of English, such as TOEFL or IELTS, or superior academic achievement in a school where English is the language of instruction. Although not required, an interview on campus or with a College admissions representative overseas is considered to be very helpful.
3. Required standardized tests (SAT, ACT, and SAT subject tests) are waived for those who live in countries where such testing is unavailable. In countries where testing is available, applicants are strongly advised to make test arrangements early and to have scores reported directly to Swarthmore College by the appropriate application deadline.

4. It is the applicant's responsibility to guarantee the authenticity of all submitted credentials. This includes notarized translations of official documents and certified school transcripts signed by the appropriate school staff member.

5. The College does not accept transfer applications from foreign nationals who require financial aid.

3.7 Applications for Transfer

The College welcomes well-qualified transfer applicants. Applicants for transfer must have had an outstanding academic record in the institution attended and must present transcripts for both college and secondary school work, including an official statement indicating that the student is leaving the institution attended in good standing. Students who have completed the equivalent of two or more semesters of university-level work must apply for transfer admission. Admission status for students who have completed less than the equivalent of two semesters of university-level work will be decided on a case-by-case basis. Results of the SAT and ACT are optional for transfer applicants.

Four semesters of study at Swarthmore College constitute the minimum requirement for a degree, two of which must be those of the senior year. Applications for transfer must be filed by April 1 of the year in which entrance is desired. Swarthmore does not have a midyear transfer application process. Need-based financial assistance is available for transfer students who are U.S. citizens or permanent residents. Transfer applications are not accepted from international students who require financial aid.

Transfer applicants are notified of decisions by mid to late May.

4 Expenses

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4.1 Student Charges

Total charges for the 2012–2013 academic year (two semesters) are as follows:

Tuition	\$42,744
Room	\$6,500
Board	\$6,170
Student activities fee	<u>\$336</u>
	\$55,750

These are the annual charges billed by the College. Students and their parents, however, should plan for expenditures associated with books, travel, and other personal items. In addition, the College will bill for unpaid library fines, Worth Health Center fees, and other fees and fines not collected at the source.

Students engaged in independent projects away from the College for which regular academic credit is anticipated are expected to register in advance in the usual way and pay normal tuition. If the student is away from the College for a full semester, no charge for room and board will be made. However, if a student is away for only a part of a semester, the preceding charges may be made on a pro rata basis.

Students who have not satisfied their financial obligations will not be permitted to return to campus, attend any classes, live in campus housing, have a meal plan, register via add/drop (or any other method) for any classes, enroll for the following semester, participate in the room lottery, obtain a transcript, or be permitted to be graduated. Late fees of 1.5 percent per month will accrue on all past-due balances.

The regular College tuition covers the normal program of four courses per term as well as

variations of as many as five courses or as few as three courses. Students who elect to carry more than five courses incur a unit charge for the additional course (\$5,343) or half-course (\$2,671), although they may within the regular tuition vary their programs to average as many as five courses in the two semesters of any academic year. College policy does not permit programs of fewer than three courses for degree candidates in their first eight semesters of enrollment.

4.1.1 Study Abroad

Students who wish to receive Swarthmore credit for study abroad must, for the semester or year abroad, pay the full Swarthmore charges (excluding the student activities fee). Financial aid is normally applicable to study abroad, with the approval of the Off-Campus Study Office. Students contemplating study abroad should begin working with the Off-Campus Study Office well in advance for academic and administrative planning.

4.2 Payment Policy

Semester bills are mailed in July and December. Payment for the first semester is due by July 31, 2012, and for the second semester by January 7, 2013. A 1.5 percent late fee will be assessed monthly on payments received after the due date. Many parents have indicated a preference to pay College charges on a monthly basis rather than in two installments. For this reason, Swarthmore offers a monthly payment plan, which provides for payment in installments without interest charges. Information on the plan is mailed to all parents in April.

4.3 Withdrawal Policy

Charges for tuition and fees will be reduced for students who withdraw for reasons approved by the dean before or during a semester. Reductions in charges will be made in the following ways:

<i>For Students Who Withdraw</i>	<i>Tuition and Fees Reduced</i>	<i>Board Reduced</i>	<i>Room Reduced</i>
Before start of classes	To \$0	To \$0	To \$500
During first 2 weeks of classes	To \$200	To \$100	To \$500
During week 3	By 90 percent	By 90 percent	To \$500
During week 4	By 80 percent	By 80 percent	To \$500
During week 5	By 70 percent	By 70 percent	To \$500
During week 6	By 60 percent	By 60 percent	To \$500
During week 7	By 50 percent	By 50 percent	To \$500
During week 8	By 40 percent	By 40 percent	To \$500
During week 9 and beyond	No further reduction on tuition, fees, board, or rooms		

4 Expenses

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4.3.1 Withdrawal From Study Abroad

If a student elects to withdraw from an Off-Campus Study program abroad the student also assumes financial responsibility for the expenses that the College has either paid out or obligated on behalf of the student.

Unrecoverable expenses may include, but are not limited to the payment of tuition, room and board, and travel allowances. The student must repay any unrecoverable expenses and any travel and/or meal and/or lodgings allowance that have been advanced, before he or she will be permitted to re-enroll at the College, receive an official transcript, or be graduated from the College. Financial aid will not be available for this purpose of covering these costs. Once the obligated and unrecoverable amounts have been met by the student, College charges will be reduced in a manner consistent with the charge reduction/withdrawal policy for tuition, room, and board set forth in section 4.3.

c. No room refund if notice is received after the 8th week.

2. Takes a leave of absence and notifies the Dean's Office, they will be assessed:

a. No penalty if notice is given by Dec. 1.

b. A \$100 penalty if notice is given between Dec. 1 and Jan. 5.

c. A \$500 penalty if notice is given between Jan. 5 and the 8th week of classes.

d. No room refund after the 8th week.

4.5 Inquiries

All correspondence regarding payment of student charges should be addressed to Linda Weindel, student accounts manager, or phone (610) 328-8396.

4.4 Housing Fines

Any time a student selects a room in the lottery that they do not use, the minimum fine is \$100. Other fines follow:

4.4.1 Fall Semester

If a student selects a room in the lottery and

1. Chooses to live off campus and is still enrolled, they will be assessed:

a. A \$500 penalty unless everyone in the space notifies the Residential Life Office by June 1 that they will not be occupying the room. If everyone does notify the office, the fine will be \$100 each.

b. A \$500 penalty for each person moving off campus when notice is given between June 1 and the 8th week of classes.

c. No room refund when notice is given after the 8th week.

2. Takes a leave of absence and notifies the Dean's Office, they will be assessed:

a. A \$100 penalty if notice is given by Aug. 1.

b. A \$500 penalty if notice is given between Aug. 1 and the 8th week of classes.

c. No room refund after the 8th week.

4.4.2 Spring Semester

If a student selects a room in the December lottery or already has a room from fall semester and

1. Chooses to live off campus and is still enrolled, they will be assessed:

a. A \$250 penalty unless everyone in the unit leaves this space and notifies the Residential Life Office by Dec. 1.

b. A \$500 penalty each if notice is given between Dec. 1 and the 8th week of classes.

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To make a Swarthmore education available to qualified students, the College designated in excess of \$30 million for Swarthmore scholarships for the coming year. About 52 percent of our student body receives scholarship assistance through Swarthmore on the basis of their families' financial situations. To meet the needs of our students, the average aid award for 2011–2012 was \$38,800. A total of 70 percent of our students will share more than \$37 million in scholarships, loans, and campus job opportunities during the 2012–2013 academic year.

Although admission and financial aid decisions are made separately, they are made at the same time. A prospective student should apply for Swarthmore aid and outside assistance when applying for admission to Swarthmore. Instructions for filing an aid application are included in the admissions application instruction booklet or can be found at www.swarthmore.edu/financialaid. Financial assistance will be offered if a family does not have the capacity to meet college costs without our help. The amount a family is expected to contribute is determined by weighing the family's income and assets against such demands as taxes, living expenses, medical expenses, siblings' undergraduate tuition expenses, and so forth. Family contributions also include a \$2,000 to \$2,500 summer earnings contribution from students, as well as a portion of the student's personal savings and assets.

For 2012–2013, the College charges, which include tuition, room, board, and a student activity fee, will be \$55,750. This activity fee covers not only the usual student services—health center, library, and laboratory fees, for example—but also admission to all social, cultural, and athletic events on campus. The total budget figure against which aid is computed is \$58,090. This allows for an estimated \$1,180 for books and supplies and \$1,160 for personal expenses. A transportation allowance is added to the budget for those who live in the United States but more than 100 miles from the College. It is this larger total that we use when determining a student's need for our help.

Although our financial aid awards are loan-free, students and parents remain welcome to borrow to help pay the family's share of Swarthmore expenses (see section 5.2).

In keeping with our policy of basing financial aid on demonstrated need, the College reviews each student's family financial situation annually. Students who would like to be considered for our support for the next year must submit a new financial aid application each spring. A student's aid is not withdrawn unless financial need is no longer demonstrated.

Assistance is available only during a normal-length undergraduate program (eight semesters) and only if a student enrolls full-time each semester, earns four credits each semester, and makes satisfactory academic progress. These factors also apply in our consideration of a sibling's undergraduate educational expenses. Students who choose to live off campus will not receive Swarthmore Scholarship or Supplemental Educational Opportunity Grants in excess of their college bills. However, the cost of living off campus will be recognized in the calculation of a student's financial need, and other outside sources of aid may be used to help meet off-campus living expenses once the college bill is satisfied.

The College has, by action of our Board of Managers, reaffirmed its need-blind admission policy and the related practice of meeting the demonstrated financial need of all enrolled students. Although, eligibility for federal aid funds is limited to those who are able to complete and to submit the Statement of Registration Compliance, additional funds have been made available for those who are unable to accept need-based federal aid because they have not registered with the U.S. Selective Service.

U.S. citizens and permanent residents who have not previously received financial aid may become eligible and may apply to receive aid if their financial situations have changed. A student who marries may continue to apply for aid, though parents are still expected to contribute to the student's education.

Financial support for foreign national students is limited and must be requested during the admission application process. New aid applications from foreign nationals cannot be considered after admission.

Answers to most financial aid questions are available at www.swarthmore.edu/financialaid.

5.1 Scholarships

For the academic year 2012–2013, the College will award more than \$30 million in Swarthmore Scholarship funds. About one-half of that sum will be provided through the generosity of alumni and friends by special gifts and the scholarships listed in section 5.4.

Students do not apply for a specific College scholarship. Rather, the College decides who is to receive restricted endowed scholarships or support from general scholarship funds.

Although the qualifying criteria for awarding most endowed scholarships remain general, some donors have established explicit guidelines that closely mirror the interests of the individual for whom the scholarship is named. Financial need, however, is a requirement for all college scholarships except the regional McCabe Scholarship. Federal Pell

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Grants and federal Supplemental Educational Opportunity Grants are also available to eligible students.

5.2 Loan Funds

Although our aid awards are now loan-free, students may choose to borrow instead of working or to help ease the family's burden. First-year students may borrow up to \$5,500; sophomores may borrow \$6,500, and juniors and seniors may borrow up to \$7,500.

The federal Direct Stafford Loan is a long-term, low-interest educational loan. Eligibility for a federal Direct Stafford Loan is determined by the College, using federal guidelines. Family income, family size, asset strength, and number of children in college, etc., form the basis for the determination of your federal eligibility.

Parents who wish to borrow might consider the federal Direct PLUS Loan. Up to \$55,750 per year is available at 7.9 percent interest, and repayment may be made over a 10-year period.

For more information about these loan programs or other financial options read our financial aid brochure, or go to our website at www.swarthmore.edu/financialaid.

5.3 Student Employment

Student employment on the Swarthmore campus is coordinated by the Student Employment Office, which is under student direction. Campus jobs are available in such areas as our libraries, Information Technology Services, the student-run coffeehouse, most academic and administrative offices, and many other places on campus. Our students manage, give tours, tutor, write, coordinate, and provide support throughout the campus. Students apply for campus positions when they arrive in the fall. On-campus hourly rates of pay run from \$8.58 to \$9.20. Students receiving financial aid are usually offered the opportunity to earn up to \$1,840 during the academic year, and are given hiring priority, but there are many jobs available for non-aided students who wish to work on campus. Students are encouraged to keep a moderate work schedule—no more than about 7 or 8 hours weekly—so that academic performance is not compromised. About 1,200 of the 1,400 students on campus choose to work.

The Student Employment Office also publicizes local off-campus and temporary employment opportunities.

For those who wish to work off campus and who qualify for the federal Work-Study Program, off-campus positions in public or private nonprofit agencies may be arranged through our Financial Aid Office—if funding is sufficient.

5.4 Scholarship Funds

All students who demonstrate financial need are offered scholarship aid, some of which is drawn from the following named funds. However, students should not worry if they do not fit the specific restrictions listed because their scholarships will instead be drawn from other sources not listed here. By completing the aid application process, a student will be considered for the following funds. No separate application is needed.

(Financial need is a requirement for all scholarships except the McCabe Scholarships. No separate application is needed.)

The Catherine G. '72 and Ernest B. '72 Abbott Scholarship, established in 1999 by Catherine and Ernest Abbott, is awarded to a first-year student who shows great promise. This renewable scholarship is for a man or woman who demonstrates financial need and academic excellence.

The Karim Abdel-Motaal '90 Egypt Scholarship was established in 2012. The scholarship shall be awarded to students on the basis of academic merit and financial need and is renewable. Preference will be given first to students from Egypt, secondarily to Arab or Arab American students and thence to international students or students from the United States. For each of the preceding preferences, additional preference will be given to women candidates.

The Frank and Alice Adelberg Scholarship was established by Stephen M. Harnik '75 in 2010 in his capacity as executor of their charitable estate. The Adelbergs were Holocaust survivors who believed deeply in Jewish causes which promoted peaceful international discourse and who dedicated their benefactions to such endeavors. The scholarship is awarded to students on the basis of academic merit and financial need and is renewable. Preference will be given to students who have an interest in human rights, conflict resolution, and the promotion of peace and understanding.

The Lisa P. Albert '81 Scholarship, established in 1983 by Lisa Albert and her mother, Stella Saltonstall, is awarded to a young man or woman on the basis of scholarship and financial need, with preference given to a student with a demonstrated interest in the humanities.

The George I. Alden Scholarship, established in 1989 as a memorial by the Alden Trust with matching funds from several individual donors, is awarded on the basis of academic merit and financial need with preference given to a student from New England studying in the sciences or engineering.

The Vivian B. Allen Foundation, established in 1969, provides scholarship aid to enable foreign students to attend Swarthmore College as part

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of the foundation's interest in the international exchange of students.

The Susan W. Almy '68 Scholarship was established by this alumna in 2003. The fund supports financial aid for needy students at Swarthmore College, with preference given to students interested in international careers, especially in developing nations.

The Alumni Council Scholarship, established in 2000 by the Alumni Council of Swarthmore College, is awarded based on academic merit and financial need and is renewable.

The Alumni Scholarship is awarded to students on the basis of financial need. Established in 1991, it is funded through alumni gifts and bequests to encourage donors who cannot fund a fully endowed named scholarship.

The John R. '53 and Joyce B. '55 Ambruster Scholarship was created in 2001. The scholarship is awarded on the basis of academic merit and financial need.

The Janice R. Anderson '42 Scholarship, established in 2006, is awarded on the basis of academic merit and financial need.

The Smitha Arekapudi '99 Scholarship was established in 2006 by Drs. Bapu and Vijayalakshmi Arekapudi. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to a premed student, with a background in the humanities and social sciences, who plans to become a doctor and care for patients.

Preference is also given to students who show commitment to socially responsible citizenship, with demonstrated qualities of exceptional character, intellectual curiosity, and leadership.

The Evenor Armington Scholarship, created in 1980 in recognition of the long-standing and affectionate connection between the Armington family and Swarthmore College, is given each year to a worthy student with financial need.

The Paul '62 and Catherine '60 Armington Endowed Scholarship was established in 2005. The scholarship is awarded on the basis of academic merit and financial need and is renewable. Preference will be given to students who have plans to or are currently studying in Africa.

The Barclay G. Atkinson Scholarship and *Rebecca M. Atkinson Scholarship* were established in 1892 by Rebecca M. Atkinson and are now part of the general scholarship fund.

The Frank and Marie Aydelotte Scholarship, established in 1946 by family, friends, and alumni, is awarded to a new student who shows promise of distinguished intellectual attainment based on sound character and personality. The award is made in honor of Frank Aydelotte, president of the College from 1921 to 1940 and

originator of the Honors Program at Swarthmore, and Marie Osgood Aydelotte, his wife.

The David Baltimore '60 Scholarship was established by an anonymous donor in 2000. This renewable scholarship is awarded with preference given to a junior or senior majoring in biology or chemistry.

The Norman Barasch Scholarship was established in 2006 by Richard Barasch '75 in honor of his father. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Philip and Roslyn Barbash, M.D., Scholarship was endowed in 1990 as a memorial by their daughter and son-in-law, Babette B. Weksler, M.D., '58 and Marc E. Weksler, M.D., '58. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to women with an interest in the sciences and, in particular, in the environment.

The Charles F. Barber Scholarship was established in 2009 by Charles F. Barber, a member of the Board of Managers from 1967 to 1974, in memory of his wife of 62 years, Lois LaCroix Barber. Lois and Charles raised four children, including Robin Barber '74. The scholarship is awarded to students on the basis of academic merit and financial need and is renewable.

The W. Herman Barcus '27 Scholarship, established in his memory in 1982 by his widow, Kate, and his employer, Sun Oil, is awarded to a student with financial need.

The Philip H. Barley '66 Memorial Scholarship was established in 1968 in memory of Philip H. Barley by his family and friends and the Class of 1966, which he served as president. The scholarship provides financial assistance for a junior or senior who has demonstrated outstanding leadership qualities at Swarthmore.

The Franklin E. Barr Jr. '48 Scholarship was established in 1984 by Betty Barr to honor her husband's memory and is awarded to a first-year student who has broad academic and extracurricular interests and shows promise of developing these abilities for the betterment of society. This scholarship, based on financial need, is renewable for three years.

The Robert A. Barr, Jr. '56 Scholarship was established by a group of alumni in 2011 in honor of Robert A. Barr, Jr., who served Swarthmore College as Dean of Men from 1962–1970, and as Dean of Admissions from 1977–1994. This scholarship was created to honor Dean Barr for his contributions to the lives of Swarthmore students; as an unfailingly supportive adviser to so many he admitted to the College, and as a role model who taught us how to treat and respect one another. This

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renewable scholarship will be awarded to a first year student with strong academic credentials who also shows promise of making substantial contributions to the co-curricular life of the campus. When appropriate, preference will be given to sons and daughters of Swarthmore alumni.

The Peter B. Bart '54 Scholarship, established in 2005, is awarded to deserving students.

The Connie L. Baxter Scholarship was established by Eugene M. Lang '38 in 2010 in honor of Connie L. Baxter, in recognition of her extraordinary dedication as a member of the Swarthmore College staff. The scholarship shall be awarded to students on the basis of academic merit and financial need and is renewable. Preference will be given to students who transfer to Swarthmore from a community college, or to students with an interest in classics or theater.

The H. Albert Beekhuis Scholarship in engineering is awarded on the basis of academic merit and financial need to a first-year student and is renewable through the senior year as long as that student retains a major in engineering. This scholarship was endowed in 1989 through the generous bequest of Dr. Beekhuis, neighbor, friend, and successful chemical engineer.

The Patty Y. and A.J. Bekavac Scholarship. Established in 1997 by their daughter, Nancy Y. Bekavac '69, the scholarship is awarded on the basis of financial need, with preference given to students from western Pennsylvania.

The Margaret Fraser Bell '53 Scholarship, created in 2000 in her memory by her husband, Monroe Bell, is awarded each year to a junior on the basis of academic merit and financial need, with preference given to a student majoring in Russian.

The Sherry F. Bellamy '74 Scholarship was established in 2003 by Sherry Bellamy. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Belville Scholarship was established in 1882 by Catharine Reading Belville, Class of 1919. Honoring Robert Chambers Belville and Margaret Klein Belville, the scholarship is awarded annually to an incoming student of particular promise.

The Brand and Frances Blanshard Scholarship, established in 1987 by a former student to honor the memory of this philosophy professor and his wife, is given to a deserving student with high academic promise.

The Al and Peggi Bloom Endowment for Advancing Swarthmore's Global Reach was established in 2005. This endowment supports international student financial aid and supports faculty effort in any discipline or across

disciplines that enhances the global reach of the college curriculum.

The Blough and Locksley Family Scholarship, established in 2003 by Stephen Blough '79 and Sally Locksley '79, is awarded on the basis of academic merit and financial need. The scholarship is renewable.

The Jeanne Cotten Blum '40 Scholarship, established in 2003 by Jeanne Cotten Blum, is awarded on the basis of academic merit and financial need. The scholarship is renewable.

The Frank '36 and Benita Blumenthal Scholarship was established in 2006 by Frank Blumenthal. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Curtis Bok Scholarship was established in 1964, the College's centennial year, in honor of the late Philadelphia attorney, author, and jurist, who was a Quaker and honorary alumnus of Swarthmore. The renewable scholarship is assigned annually to a junior or senior whose qualities of mind and character indicate a potential for humanitarian service such as Curtis Bok himself rendered and would have wished to develop in young people. Students in any field of study, and from any part of this country or from abroad, are eligible.

The Winifred Cammack Bond '43 Scholarship was established by Winifred Cammack Bond and her husband, George Cline Bond '42, to be awarded to a first-year student who is the first member of his or her family to attend college, with a high school record showing strong academic, athletic, and leadership abilities.

The Book and Key Scholarship was established in 1965 by members of Book and Key, a men's secret honorary society, when the society was dissolved. The scholarship is awarded to a member of the senior class.

The Anne C. Booth '32 Endowed Scholarship was established in 2006 by this alumna who wanted students to be able to share the special educational experience she enjoyed, regardless of financial need. Although Anne died in 2006, her memory lives on through this scholarship.

The Frank R. Borchert Jr. '58 and Thomas K. Glennan Jr. '57 Scholarship was established in 2002 by T. Keith '82 and Kathryn P. '82 Glennan in honor and memory of their uncle and father who, from their days as fraternity brothers at Swarthmore, became lifelong friends and brothers-in-law. They shared a common commitment to educational excellence, and each devoted his professional life to this cause. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Edward S. Bower '42 Memorial Scholarship, established in 1958 by Mr. and Mrs. Ward T. Bower in memory of their son, is

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awarded annually to a student who ranks high in scholarship, character, and personality.

The George '38 and Josephine Clarke '41 Braden Scholarship was established in 1999 by their children in honor of George and in memory of Josephine. The renewable scholarship is awarded to a student with demonstrated need for financial assistance, with preference for a child of immigrant parents or guardians.

The William A. Bradford Jr. '66 Scholarship was established in 2000 by William Bradford. The renewable scholarship provides financial assistance to a student who shows great promise and is based on academic merit and financial need.

The Carol Paxson Brainerd '26 Scholarship, established in 2001, is awarded on the basis of financial need and academic merit.

The Susan Goldman Brandes '76 Memorial Scholarship was established in 2008 by her husband, Lee Brandes. The renewable scholarship is awarded to students on the basis of academic merit and financial need. Preference is given to students majoring in chemistry.

The Daniel Walter Brenner '74 Memorial Scholarship, established in 1979 by family and friends in memory of Daniel W. Brenner, is awarded to a senior majoring in biology who is distinguished for scholarship and has an interest in plant ecology, wildlife preservation, or animal behavior research. The recipient is chosen with the approval of the biology faculty.

The Leon Willard Briggs '17 Scholarship, established in 1979 with a bequest from Ina Carey Diller in honor of her husband, is awarded to a worthy student with financial need.

The John S. Brod '34 Scholarship, established in 1984 with gifts from this chemistry major and his employer, Procter & Gamble, is awarded to a deserving student on the basis of academic merit and financial need.

The John G. Brokaw Scholarship was established in 2005 by Lawrence Jean Richardson '78 and Jacqueline Brokaw Richardson '80. It is awarded on the basis of academic merit and financial need.

The Robert C. Brooks Scholarship was established in 1964 by several of his former students as a memorial to Professor Brooks, who taught political science at Swarthmore from 1912 to 1941. The scholarship is awarded to students on the basis of academic merit and financial need.

The Edna Pownall Buffington, Class of 1898, Scholarship was established by a bequest from Albert Buffington, Class of 1896, during 1964, the College's centennial year. This scholarship

honors a graduate and a longtime resident of Swarthmore and is awarded on the basis of financial need.

The Bushnell Family Scholarship was established in 2005 by the Bushnell family: father Douglas, daughter Rebecca Bushnell '74, and brothers Michael and David, in honor of wife and mother, Peggy Meeker '45. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Malcolm Campbell '44 Unitarian Scholarship, established by Malcolm Campbell on the occasion of his 50th reunion, is awarded to a student who is an active Unitarian Universalist with financial need and a strong academic record. The scholarship is renewable.

The Centennial Scholarship, established in 1964 with gifts from many donors to the Centennial Campaign, is awarded on the basis of financial need.

The Chang/Hawley '58 Scholarship, established in 2003, is named for Rosalind Chang Whitehead and John K. Hawley. Their son, Charles Loy Hawley '85, is also an alumnus. The scholarship is awarded on the basis of financial need and academic merit.

The Chi Omega Scholarship, established by the sorority and the Swarthmore Chapter of Gamma Alpha, provides an award to a student annually on the basis of academic merit and financial need.

The Elinor Jones Clapp '46 Scholarship was established in 2003. The renewable scholarship is awarded on the basis of academic merit and financial need with preference given to students who are U.S. citizens residing abroad.

The William '17 and Eleanor Stabler '18 Clarke Scholarships, established in 1985 in their honor by W. Marshall '47 and Cornelia Clarke '46 Schmidt, are awarded to two worthy first-year students with financial need.

Preference for these renewable scholarships is accorded to members of the Society of Friends.

The Class of 1913 Scholarship, established on the occasion of the class's 50th reunion, is awarded to a student who has demonstrated financial need.

The Class of 1914 Scholarship, established in honor of the class's 50th reunion, is awarded to a student who has demonstrated financial need.

The Class of 1915 Scholarship, established in 1940, is awarded to a student with financial need.

The Class of 1917 Scholarship is awarded to a student who has demonstrated financial need.

The Class of 1925 Scholarship, created on the occasion of the class's 50th reunion, is awarded on the basis of academic merit and financial need.

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The Class of 1930 Scholarship was endowed on the occasion of the class's 60th reunion. The renewable scholarship is awarded alternately to a woman or a man on the basis of sound character and academic achievement, with preference given to those who exercise leadership in athletics and community service.

The Class of 1932 Scholarship was established on the occasion of the class's 70th reunion. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Class of 1938 Harriet and William Carroll Scholarship was established on the occasion of the class's 65th reunion by their classmates and members of their family in honor of the Carrolls' long-standing service to the College. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Class of 1939 Scholarship was established at the 50th reunion of the class in fond memory of Frank Aydelotte, president of the College from 1921 to 1940, and his wife, Marie Aydelotte. The renewable scholarship is awarded to a worthy student with financial need.

The Class of 1941 Scholarship was created in celebration of the 50th reunion of the class. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Class of 1943 Scholarship, established to honor the 50th reunion of that class, is awarded to a student in the sophomore class on the basis of sound character and academic achievement, with preference given to those participating in athletics and community service. The scholarship is renewable through the senior year.

The Class of 1946 Scholarship was established on the occasion of the class's 50th reunion in recognition of the Swarthmore tradition that so influenced its members.

The Class of 1949 Scholarship was established in 1999 in celebration of the class's 50th reunion. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Class of 1950 Scholarship, established on the occasion of the class's 50th reunion, is awarded to one or more deserving students. It is renewable.

The Class of 1952 Evans H. Burn Memorial Scholarship, established on the occasion of the class's 50th reunion in memory of the class's longtime president, is awarded on the basis of academic merit and financial need. It is renewable.

The Class of 1954 Scholarship, established on the occasion of the class's 50th reunion, is awarded on the basis of academic merit and financial need. It is renewable.

The Class of 1956 Scholarship, established on the occasion of the class's 25th reunion, is awarded on the basis of academic merit and financial need.

The Class of 1957 Gilmore Stott Memorial Scholarship, established on the occasion of the class's 50th reunion, is in memory of Dean Gilmore Stott, who died in 2005. A beloved College professor and dean for 55 years who played the viola in the College orchestra, taught ethics, and counseled thousands of students; he was widely admired for his intelligence, judicial manner, modesty, gentleness, and consideration of others. This renewable scholarship is awarded, on the basis of academic merit and financial need, to a student who shares some of Dean Stott's wonderful characteristics.

The Class of 1960 Scholarship was created in honor of the 50th reunion of the class. This renewable scholarship shall be awarded to students on the basis of academic merit and financial need.

The Class of 1963 Scholarship, awarded on the basis of academic merit and financial need, is renewable through the senior year. The scholarship was created in honor of the class's 25th reunion.

The Class of 1964 Scholarship, established in honor of their 50th reunion, is renewable and awarded to students on the basis of academic merit and financial need.

The Class of 1969 Scholarship was established at the 25th reunion of the class in honor of the contributions made by Courtney Smith, president of Swarthmore College from 1953 to 1969. The scholarship was given with bittersweet memories of the campus turmoil of the 1960s and with confidence in the power of open discussion and reconciliation. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Cochran Memorial Scholarship, established in 1979 in memory of the Cochran family by the estate of Marie A. Cochran, is awarded annually to a student who has demonstrated financial need.

The David L. '77 and Rhonda R. '76 Cohen Scholarship, established in 2004, is awarded on the basis of academic merit and financial need.

The Sarah A. Cole '34 Scholarship, founded in 1953 by her parents to celebrate her life and memory, is awarded to deserving students on the basis of academic merit.

The Charles A. Collins, Class of 1912, Scholarship, established in 1974, is awarded every year to a deserving student in need of financial assistance, in accordance with the donor's will. Charles Collins, a New Jersey farmer, was active in local Quaker affairs and served as a trustee of the Philadelphia Yearly Meeting.

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The N. Harvey Collisson '22 Scholarship, established in 1965 by his family and the Olin Mathieson Charitable Trust in memory of N. Harvey Collisson, is awarded to a first-year student. Selection places emphasis on character, personality, and ability.

The Gehan Talwatte '87 and Keara Connolly '87 Endowed Scholarship was established in 2011. The scholarship shall be awarded to students on the basis of academic merit and financial need and is renewable. Preference will be given first to students from Sri Lanka, secondarily to other international students, and thence to students from the United States.

The Marcia Perry Ruddick Cook '27 Scholarship is awarded to a junior on the basis of merit and need, with preference given to an English literature major. The renewable scholarship was endowed in 1987 by J. Perry Ruddick in memory of his mother.

The Edward Hanes Cooley '43 Endowed Scholarship, established in 2005, is awarded on the basis of academic merit and financial need, with a preference for a student majoring in engineering.

The Helen Ridgway Cooley, Class of 1907, Endowed Scholarship, established in 2005, is awarded on the basis of academic merit and financial need, with a preference for a female student majoring in music.

The Stephanie Cooley '70 Scholarship was established in loving memory by her parents in 1984 and is awarded on the basis of financial need, with preference for a student from Greece or a student with an interest in the study of classics.

The David S. Cowden '42 Scholarship was established in 1977 by David Cowden, who taught English literature at Swarthmore from 1949 until his death in 1983. The scholarship is awarded on the basis of financial need.

The Mark W. Crandall '80 International Scholarship was established in 2004. The renewable scholarship is awarded on the basis of academic merit and financial need, with a preference for international students.

The John '41 and Barbara Crowley Endowed Scholarship was established in 2006 by the Crowleys as a symbol of their long-standing affection for and commitment to the College. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Crum Meadow Scholarship was created by an anonymous donor in 2001. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Ellsworth F. Curtin '16 Memorial Scholarship was established in 1982 by Margaretta Cope Curtin '18 in memory of her

husband, with preference for engineering majors.

The Marion L. Dannenberg Scholarship, established in 1978, is awarded to a first-year student with financial need who ranks high in personality, character, and scholarship. This endowment is in memory of Mrs. Dannenberg, who was the mother, grandmother, and great-grandmother of seven students who attended Swarthmore.

The Anna Janney DeArmond '32 Scholarship was established by bequest from her estate in 2008. The renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to a female upper-class student interested in a teaching career at the high school or college level, majoring or expressing an interest in literature in the English language or the history of countries in which the language of literature is ordinarily English.

The Edith Thatcher '50 and C. Russell '47 de Burlo Scholarship is awarded to Swarthmore College students who are United States citizens whose legal residence is in Maine, Vermont, Rhode Island, or Massachusetts and who intend to major either in engineering or the humanities. The renewable scholarship, established in 1986 as the gift of Edith and Russell de Burlo, is awarded on the basis of financial need and academic merit.

The Kenneth William Defontes Jr., Class of 1972, Scholarship was established in 2006 to support a deserving student who expresses interest in pursuing a major in engineering or the physical sciences. This renewable scholarship is awarded on the basis of academic merit and financial need and may be given to a first-year student.

The Delta Gamma Scholarship, created by the sorority, is awarded to a student who has demonstrated academic merit and financial need.

The William Diebold, Class of 1906, William Diebold Jr., Class of 1937, and John T. Diebold, Class of 1949, Endowed Scholarship was established in 2004 by John T. Diebold in honor of the Diebold family. The scholarship is awarded on the basis of academic merit and financial need, with a preference for students studying and performing research in Europe.

The Edward L. Dobbins '39 Memorial Scholarship was established by Hope J. Dobbins in 1997 in memory of her husband. The Dobbins scholarship is awarded to a worthy student who demonstrates a commitment to the betterment of society through involvement in community or environmental activism. Preference for the renewable scholarship is given to residents of Berkshire County, Mass.

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The Patrick A. Dolan Scholarship was established by Patrick D. Dolan '83 in 2004. The renewable scholarship is awarded on the basis of academic merit and financial need to a first-year student who shows great promise.

The Francis W. D'Olier, Class of 1907, Scholarship, created in 1964 in memory of Francis W. D'Olier, is awarded to a first-year student. Selection for the renewable scholarship focuses on character, personality, and ability.

The William Dorsey Scholarship was established in 1906 through the estate of Elizabeth Dorsey, a member of the Board of Managers from 1868 to 1870, in memory of her father, who served on the Board of Managers from 1862 to 1865 and from 1867 to 1874. The scholarship is awarded on the basis of financial need.

The Agnes B. Doty Memorial Scholarship was established in 2000 by her daughter, Christine M. Doty '70. The renewable scholarship is awarded each year, with a preference given to students majoring in Asian studies.

The Marcel Dubien Endowed Scholarship was established in 2007 by Jacques Jousot-Dubien '49 to honor his father. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to students from Europe who are not U.S. citizens.

The Faith '51 and Ross '50 Eckler Scholarship was established in 2002 by A. Ross and Faith Woodward Eckler. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to a man or woman with a commitment to community service.

The Marjorie Vandeusen '38 and J. Earle '36 Edwards Scholarship was established by an anonymous donor in 2000. The renewable scholarship is awarded with preference given to a junior or senior who has demonstrated a commitment to socially responsible citizenship, with a special interest in peace and conflict studies.

The Maurice G. Eldridge '61 Scholarship was created by an anonymous donor in recognition of outstanding administrators at Swarthmore College. The Eldridge Scholarship was established in 1999 to honor Maurice G. Eldridge, vice president of college and community relations and executive assistant to the president. The renewable scholarship is awarded to a student with merit and need who has demonstrated a commitment to socially responsible citizenship, with a preference for a student from the Washington, D.C., public school system, especially from either the Banneker Academic High School, Duke Ellington School of the Arts, or the Bell Multicultural School.

The George Ellsler, Class of 1890, Scholarship, created in 1943 by a bequest from Mary Ellsler, is awarded to a student who has demonstrated financial need.

The Robert K. Enders Scholarship, established by his friends and former students to honor Dr. Robert K. Enders, a member of the College faculty from 1932 to 1970, is awarded annually to a worthy student with an interest in the study of biological problems in a natural environment.

The J. Horace Ervien, Class of 1903, Scholarship, created in 1979 with gifts from J. Horace Ervien and his wife, is awarded to students demonstrating academic merit and financial need.

The European Alumni Scholarship was established in 2006 by gifts from Antoinette Graefin zu Eltz '01, Jacques Jousot-Dubien '49, and other European alumni. This scholarship is awarded on the basis of academic merit and financial need. Preference is for students from Europe who are not U.S. citizens.

The Howard S., Class of 1903, and Gertrude P. Evans Scholarship provides scholarships for worthy students with financial need. Howard Evans majored in engineering at Swarthmore and was a native of the village of Swarthmore.

The Philip Evans '48 Scholarship was established in fond memory of Philip Evans by his friend Jerome Kohlberg '46 and seeks to expand the diversity of the Swarthmore community by bringing to campus students who are outstanding in leadership, intellectual curiosity, community service, and athletic participation. The scholarship, awarded to members of the first-year class and renewable annually, provides a summer-opportunity grant as well as internship, mentoring, networking, and alumni opportunities.

The Michael S. Fedak '82 Scholarship was established in 2003. The renewable scholarship is awarded on the basis of academic merit and financial need with preference given to students from New Jersey majoring in economics or mathematics.

The Samuel and Gretchen Vogel '56 Feldman Scholarship was established in 1992 by Gretchen Vogel Feldman and her husband, Samuel. The renewable scholarship, awarded on the basis of financial need, is given to a student interested in pursuing a teaching career.

The Samuel M. and Gretchen Vogel '56 Feldman Scholarship II was established in 2000. The renewable scholarship, awarded on the basis of financial need, is given to a student interested in pursuing a teaching career after graduating from Swarthmore College.

The Martin Fleisher '80 and Mark Risk '78 Scholarship, established in 2005, is awarded on the basis of academic merit and financial need.

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The Eleanor Flexner '30 Scholarship, established in 1989, is awarded to a deserving student on the basis of academic merit and financial need, with preference given to a student majoring in English literature.

The Margaret McCain Ford '43 Scholarship was established in 2006 in her memory by her husband, Thomas Ford, and their children. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Norma Patz Fox '82 and Clifford Fox Scholarship was established in 2006 by Clifford and Norma Patz Fox. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Caroline W. Frame Scholarship was established in 1885 by a bequest from her grandfather, Samuel Willets. The funds, now part of the general scholarship fund, are awarded on the basis of academic merit and financial need.

The David W. Fraser Scholarship. This endowed scholarship was established in 1991 by the Board of Managers and friends of David Fraser in honor of his service as president of Swarthmore College from 1982 to 1991. This scholarship is awarded to one student enrolled in an approved program of academic study outside the boundaries of the United States. Preference is given to students studying in Asian, Middle Eastern, and African countries.

The Marianne Durand Frey '57 Scholarship, established by Marianne Durand Frey in 2002, reflects the donor's gratitude for scholarship aid received during her attendance at Swarthmore. This renewable scholarship is awarded based on academic merit and financial need to a woman who has attended a public high school.

The Theodore and Elizabeth Friend Scholarship was established in 1981 and was announced during the closing ceremony for The Program for Swarthmore as an expression of respect and appreciation by board members and others who have been associated with them in the service of Swarthmore College. The scholarship honors this former president of Swarthmore, who served from 1973 to 1982, and his wife. It is awarded each year on the basis of financial need to a worthy student.

The Theodore Friend and Elizabeth Pierson Friend Scholarship was established by him in 2005 and is awarded on the basis of academic merit and financial need, with a preference for a student from an Islamic country or a student engaged in Islamic Studies.

The Toge and Mitsu Fujihira Scholarship was created in 2000 by their son, Donald Fujihira '69. The renewable scholarship is awarded to a man or woman who shows great promise and assumes both financial need and academic

excellence. Preference is given to students of Asian descent.

The John and Gail Gaustad Scholarship was established by friends and students of the Gaustads to honor their many years of service to the College. In 1984, John Gaustad, the Edward Hicks Magill Professor of Astronomy, and his wife, Gail, started the practice of welcoming international students into their home during periods when the dorms were closed. Over the years, they were hosts to about 120 students with many becoming close and lasting friends. This renewable scholarship, expressing appreciation for the Gaustads' generosity and dedication, is awarded annually to a promising student who demonstrates financial need and academic excellence.

The Martha Salzmann Gay '79 Scholarship was created in 2000 by Martha S. Gay. The renewable scholarship assumes both academic excellence and financial need and is awarded to a first-year student who shows great promise.

The David Gelber '63 and Kyoko Inouye Scholarship, established in 2004, is awarded on the basis of academic merit and financial need, with a first preference for students from New York or New Jersey majoring in history and a second preference for humanities majors.

The Jeffrey L. Gertler '74 Memorial Scholarship was established in 2005 by an anonymous donor. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Joseph E. Gillingham Scholarship was established by a bequest from prominent Philadelphia merchant Joseph E. Gillingham, who died in 1907. The scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The Allis Dale and John E. '59 Gillmor and Jordan and Sarah Gillmor '92 Hymowitz Scholarship was established in 2008 by this family on the occasion of John's 50th reunion. The scholarship is awarded on the basis of academic merit and financial need to a first-year student who shows great promise.

The Joyce Mertz Gilmore '51 Scholarship, awarded to an entering first-year student, is renewable. The recipient is chosen on the basis of mental vigor, concern for human welfare, and the potential to contribute to the College and the community outside. The award was established in 1976 by Harold Mertz '26 in memory of his daughter, Joyce Mertz Gilmore.

The Barbara Entenberg Gimbel '39 Scholarship was endowed in 1980 in memory of Barbara Entenberg Gimbel by her husband, Dr. Nicholas S. Gimbel. The scholarship is awarded on the basis of need to a worthy student, with preference for a black candidate.

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The Chloe and Raoul Glant Scholarship was established in 2005 by their family to honor their zeal for lifelong learning and passion for greater understanding of the issues facing today's world. The scholarship is awarded based on need and academic achievement, with a preference for a foreign or American student who demonstrates intellectual and personal integrity and a strong commitment to the public good.

The Barbara Nugent Glouchevitch Scholarship was established in 2004 by Michel Glouchevitch '77 in memory of his mother, a 1948 Bryn Mawr graduate. Barbara had close ties to Swarthmore and lived her abbreviated life enthusiastically pursuing career, family, intellectual, and sports activities. This scholarship is awarded on the basis of merit and need to students showing distinction in academics, leadership, and extracurricular activities.

The Marcia and John D. Goldman '71 Scholarship was created in 1992 and is awarded on the basis of need to a student with a strong academic record and leadership qualities. Preference is given to students from northern California.

The Berda Goldsmith Scholarship, established in 1991 in memory of Mrs. Goldsmith, is a need-based scholarship awarded annually to a music major, beginning in his or her junior year. Mrs. Goldsmith was a music lover and patroness of the Settlement Music School. Preference will be given to a student who has attended the Settlement Music School and shows an interest and proficiency in playing the piano.

The Kermit Gordon '38 Scholarship was created by an anonymous donor in 2000. This renewable scholarship is awarded on the basis of need, merit, and an interest in public policy.

The Cynthia Norris Graae '62 and Stephen L. Bloom '62 Scholarship recognizes two dedicated alumni, both members of the Class of 1962. It was created by an anonymous donor in 2007 in recognition of Cynthia Norris Graae, an alumna whose service to the College included serving on Alumni Council and the Board of Managers, and expanded in 2011 in recognition of her late husband Stephen L. Bloom, an alumnus who was a gifted clarinetist who was a member of both the orchestra and the wind ensemble while a student at Swarthmore. The renewable scholarship is awarded on the basis of financial need, with preference given to a student who plays a musical instrument.

The Neil R. Grabois '57 Scholarship was created by an anonymous donor in 2001. The scholarship is awarded on the basis of academic merit and financial need, with preference for

students from urban public high schools who wish to study engineering or science.

The Sarah Maurer Graham '77 Scholarship was established in 2003 by Sarah's husband, Robert B. Graham, after her passing to honor her curiosity, achievements, and passion for Swarthmore. The renewable scholarship is awarded on the basis of academic merit and financial need with preference given to students interested in classical studies.

The Edward F. Green '40 Scholarship, established in 1999 by a bequest from this alumnus, is awarded on the basis of academic merit and financial need.

The Walter W. Green Scholarship and the *White Open Scholarships* Mr. and Mrs. Daniel S. White, Class of 1875, on the occasion of the class's 50th reunion, established three scholarships in the names of Howard White Jr., Serena B. White, and Walter W. Green. They are awarded annually on the basis of financial need and are tenable for four consecutive years.

The James E. Gregory '85 Scholarship, established in 2005, is awarded on the basis of academic merit and financial need. Preference is for music majors or students who study or perform music.

The Mary Lippincott Griscom, Class of 1901, Scholarship was established in 1969 by Mary Griscom and her daughter, Mary Griscom Colegrove '42, to provide financial aid on the basis of academic merit and financial need. The scholarship honors Mary L. Griscom, who served on the Board of Managers from 1916 to 1967.

The Robert G. Grossman '53 and Ellin Grossman Endowed Scholarship, created in 2005, is awarded on the basis of academic merit and financial need, with a preference for biology or history majors.

The Pauline and Joseph Guss Endowed Scholarship was established in 2003 by Giles '72 and Barbara Guss Kemp. The scholarship is awarded on the basis of financial need and academic merit, with preference for students from Nebraska or, as a second consideration, students from the Midwest.

The Lucinda Buchanan Thomas '34 and Joseph H. '37 Hafkenschiel Scholarship was established as a memorial to Lucinda Thomas in 1989 by her husband and sons, Joseph III '68; B.A. Thomas '69; Mark C. '72; and John Proctor '75. Lucinda's father, B.A. Thomas, M.D., graduated with the Class of 1899. This scholarship is awarded to a junior and is renewable, based on need. Preference is given to students who have demonstrated proficiency in water sports or have shown talent in studio arts and who have been outstanding in service to the College.

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The Mason Haire '37 Scholarship was established in 1986 by his wife, Vivian, in honor of this alumnus, a distinguished psychologist and former member of the Swarthmore College faculty. The renewable scholarship is awarded to a first-year student with financial need who is distinguished for intellectual promise and leadership.

The Nicole Alfandre Halbreiner '82 Scholarship, established in 2005, is awarded on the basis of academic merit and financial need.

The Margaret Johnson Hall '41 Scholarship for the Performing Arts was established in 1991 by Margaret Johnson Hall. The scholarship provides financial assistance based on academic merit and financial need, with preference for students intending to pursue a career in music or dance.

The Merritt W. Hallowell '61 Scholarships were established in 2005 by a bequest from Merritt Hallowell, a loyal and generous alumnus with a sincere interest in helping students. These renewable scholarships are awarded on the basis of academic merit and financial need.

The Helene and Mark '71 Hankin Scholarship was established in 2002 by the Hankins in memory of Mark Hankin's father, Perch P. Hankin. The renewable scholarship is awarded on the basis of academic merit and financial need.

The John W. '60 and Ann E. Harbeson Scholarship, established by the Harbesons in 2004, is awarded on the basis of academic merit and financial need to a first-year student, renewable through the senior year. Preference is given to a deserving international student, reflecting the donors' active involvement, careers, and interests.

The Edith Ogden Harrison Memorial Scholarship was created in 2004 by her daughter, Armason Harrison '35. The renewable scholarship is awarded to a first-year student, with a preference for children of members of the Religious Society of Friends or to Native American students.

The Hartnett Engineering Scholarship was established in 2009 by Thomas '94 and Rachel Hartnett. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference for an engineering student who shows great promise.

The William Randolph Hearst Scholarship for Minority Students, established in 1988 by the Hearst Foundation Inc., provides financial assistance to minority students with financial need.

The Bernard B. and Phyllis N. Helfand Scholarship was established by their daughter, Margaret Helfand '69, in 2003 to honor their encouragement of nontraditional educational

pathways. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to students interested in both art and science and a commitment to improving their communities through their work.

The J. Philip Herrmann Scholarship was established in 1983 by Katharine F. Herrmann '14 and Margaret Herrmann Ball '24 in honor of their father. The renewable scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The E. Dyson and Carol Hogeland '38 Herting Scholarship was created in 1999 by Eugene M. Lang '38. The renewable scholarship is awarded with preference given to a junior or senior woman majoring in political science who plans to attend law school.

The A. Price Heusner '32 Scholarship, established in 1976 by his wife, Helen, is awarded to a student on the basis of academic merit and financial need.

The Rachel W. Hillborn Scholarship was established in 1945 by Anne Hillborn Philips, Class of 1892, in memory of her mother, Rachel W. Hillborn, who served on the Board of Managers from 1887 to 1913. The scholarship is awarded to a junior or senior, with preference for a student who is a member of the Religious Society of Friends or who is involved in international service.

The Stephen B. Hitchner Jr. '67 Scholarship was established in 1990 by the Board of Managers in memory of Stephen B. Hitchner Jr. with gratitude for his strong leadership of the Student Life Committee and his previous service to the College. Recipients of this need-based, renewable scholarship are selected from the junior class for their interest in a career in the public or nonprofit sectors.

The Betty Stern Hoffenberg '43 Scholarship, established in 1987 in honor of this alumna, is awarded to a junior or senior with academic merit and financial need who shows unusual promise, character, and intellectual strength. Strong preference is given to a student majoring in history.

The Hadassah M. L. Holcombe Scholarship, created by a bequest from this member of the Board of Managers who served from 1938 until her death in 1978, is awarded to a deserving student on the basis of academic merit and financial need, with preference given to a member of the Religious Society of Friends.

The Hollenberg-Sher Scholarship was created in 1998 by Norman Sher '52. The renewable scholarship is awarded to a first-year student.

The Carl R. Horten '47 Scholarship was created in 1985 by the Ingersoll-Rand Company on the occasion of his retirement. Preference is given

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to students planning to major in engineering or prelaw.

The Doris K. Hourihan Scholarship was established in 2006 by Jenny Hourihan Bailin '80 in memory of her mother, Doris K. Hourihan. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Everett L. Hunt Scholarship, endowed in 1973 as a reunion gift by the Class of 1937, honors this beloved emeritus professor and dean and provides an unrestricted scholarship awarded annually by the College.

The Betty P. Hunter '48 Scholarship was created in 1977. Betty P. Hunter, one of the first black students to attend Swarthmore College, established this fund by a bequest to provide scholarship aid to needy students.

The Richard M. Hurd '48 Scholarship was created in 2000 by this alumnus who served on the Board of Managers for almost two decades and his wife, Patricia. The renewable scholarship is awarded with preference given to a student majoring in engineering.

The William Y. Inouye '44 Scholarship was established in loving memory by his family, friends, and colleagues in recognition of his life of service as a physician. The renewable scholarship is awarded to a worthy junior premedical student with need.

The Aaron B. Ivins Scholarship was established with an annuity given in 1928 by Emma Ivins Gower and is awarded to a deserving student on the basis of academic merit and financial need.

The William and Florence Ivins Scholarship, created in 1993 by a bequest from Barbara Ivins '35, is awarded to a student who has demonstrated financial need.

The George B. Jackson '21 Scholarship was endowed in 1986 by Eugene M. Lang '38 in honor of the man who guided him to Swarthmore. The scholarship is awarded on the basis of financial need and academic merit, with preference given to a student from the New York metropolitan area.

The Howard M. '20 and Elsa P. '22 Jenkins Scholarship in engineering provides financial assistance to a promising sophomore or junior with need who is interested in pursuing a career in engineering. It was created in 1993 by the gift of Elsa Palmer Jenkins, Swarthmore's first woman graduate in engineering.

The George K. and Sallie K. Johnson Scholarship, established in 1928 by a bequest from Sallie Kaign Johnson, is awarded to students with financial need. Sallie Johnson was the mother of Howard Cooper Johnson, Class of 1896.

The Howard Cooper Johnson, Class of 1896, Scholarship, established in 1944 by this

alumnus who served on the Board of Managers from 1901 to 1952, is awarded with preference given to a member of the Religious Society of Friends.

The Edmund A. Jones Memorial Scholarship was created in 1965, awarding a grant each year to a graduate of Swarthmore High School and, since 1983, to a graduate of Strath Haven High School. In 2004, this four-year, renewable scholarship was designated with preference for graduates of Strath Haven High School, Delaware County high schools, or Pennsylvania high schools, respectively. Edmund A. Jones was the son of Adalyn Purdy Jones '40, and Edmund Jones '39, longtime residents of Swarthmore.

The Benjamin Kalkstein '72 Scholarship, established by his family in 2002, is awarded to a first-year student on the basis of merit and need and is renewable. Preference is given to students with an interest in environmental studies.

The Kappa Alpha Theta Scholarship, established through the generosity of the members and friends of the sorority at Swarthmore College, is awarded on the basis of academic merit and financial need.

The Kappa Kappa Gamma Scholarship, created by the sorority, is awarded to a first-year student and is renewable.

The Jennie Keith Scholarship was created by an anonymous donor in recognition of outstanding administrators at Swarthmore College. The Keith Scholarship was established in 2000 to honor Jennie Keith, professor of anthropology, who served as provost from 1992 to 2001. The scholarship is awarded to a student who shares the donor's and Jennie Keith's commitment to the use of intellectual excellence in the service of positive social change.

The Michael and Elizabeth Lavin '87 Kelley Scholarship was established in 2004. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Alexander Kemp Endowed Scholarship was established in 2001 by Giles Kemp '72 and Barbara Guss Kemp. The renewable scholarship is awarded on the basis of financial need and academic merit.

The Kennedy Scholarship is given in honor of the parents and with thanks to the children of Christopher '54 and Jane '55 Kennedy. The renewable scholarship, created in 1985, is awarded on the basis of financial need and academic merit.

The Clark Kerr '32 Scholarship was created by an anonymous donor in 2000. The scholarship is awarded with preference given to a student entering his or her senior year, who meets the model described by President Aydelotte of the all-around student with strong interests in

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academic achievement, athletics, and interests in debating and other aspects of student life and community service.

The Florence and Melville Kershaw Scholarship was endowed in 1987 in their honor by their son Thomas A. Kershaw '60. The renewable scholarship is awarded to a first-year student on the basis of financial need and academic merit, with preference given to those intending to major in engineering.

The Naomi Kies '62 Scholarship was created in 2006 in her memory by her family and friends. Naomi Kies devoted herself to community service, pursuing practical idealism and seeking peaceful solutions to political and social problems. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to international students.

The Joseph W. '44 and Elizabeth Blackburn '44 Kimmel Scholarship was established in 2003 by their son, James B. Kimmel '70. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to students from the Delaware Valley area, including eastern Pennsylvania, southern New Jersey, and Delaware.

The William H. Kistler '43 Scholarship was endowed in 1986 in his memory by his wife, Suzanne '44, his friends, and former classmates. The scholarship is awarded to a needy and deserving student majoring in engineering or economics.

The Floyd C. and Virginia Burger '39 Knight Endowed Scholarship, established by a bequest in 2006, is awarded on the basis of academic merit and financial need.

The Paul '46 and Mary Jane Kopsch Scholarship, established in 1982 through a gift of Paul J. Kopsch, is renewable and awarded each year to a junior premedical student(s) with financial need.

The Jessie Stevenson Kovalenko Scholarship, established in 1944 by Michel Kovalenko in memory of his wife, is awarded on the basis of academic merit and financial need.

The Walter W. Krider, Class of 1909, Memorial Scholarship was established by his wife, Anna Hetzell Mulford Krider, and daughter, Elizabeth Krider Snowden '36, in 1959. The Krider scholarship is awarded to a student who ranks high in scholarship, character, and personality and has financial need.

The Kyle Scholarship, established in 1993 by Elena Sogan Kyle '54, Frederick W. Kyle '54, and Robert B. Kyle Jr. '52, is awarded in the junior or senior year to a student who has shown leadership capability, made significant contributions to the life of the College, and demonstrated the need for financial assistance.

The John Lafore, Class of 1895, Scholarship, established in 1956 by his son Laurence Lafore '38 and his daughter Eleanor Lafore Gilbert, is awarded to a deserving student on the basis of academic merit and financial need.

The Laurence Lafore '38 Scholarship was established in his memory in 1986 by family, friends, classmates, and former students. Professor Lafore, author of numerous books and essays, taught history at Swarthmore from 1945 until 1969. This renewable scholarship is awarded to a student showing unusual promise.

The Robert E., Class of 1903, Elizabeth, Class of 1903, and Walter, Class of 1939, Lamb Scholarship was established in 2000 by Walter Lamb, who served on the Board of Managers from 1977 to 2002. The scholarship is awarded on the basis of academic merit and financial need.

The Barbara Lang Scholarship is awarded to a student in the junior class whose major is in the arts, preferably in music, who ranks high in scholarship and has financial need. This renewable scholarship was established in 1984 by Eugene M. Lang '38 in honor of his sister.

The Eugene M. Lang '38 Opportunity Grants are awarded each year to as many as six sophomore students who are selected by a special committee on the basis of distinguished academic and extracurricular achievement and demonstrable interest in social change. Stipends are based on financial need and take the form of full grants up to the amount of total college charges. Each Lang Scholar is also eligible for summer or academic-year community service support while an undergraduate. Projects, which must be approved in advance by a faculty committee, are expected to facilitate social change in a significant way. The program is made possible by a gift of Eugene M. Lang.

The Ida and Daniel Lang Scholarship, established in 1964 by their son, Eugene M. Lang '38, provides financial assistance for a young man or woman who ranks high in scholarship, character, and personality.

The Eleanor B. and Edward M. '30 Lapham, Jr. Scholarship, established in 1996 by Eleanor to honor her husband's memory, is awarded to a first-year student on the basis of academic merit and financial need. The scholarship is renewable for his or her years of study at Swarthmore.

The E. Hibberd Lawrence Scholarship honors the memory of a student who attended the Swarthmore Preparatory School from 1881 to 1882 and is awarded on the basis of financial need.

The Frances Reiner and Stephen Girard '41 Lax Scholarship was established in 1989 with preference for minority or foreign students who show academic merit and financial need. This

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scholarship has been endowed by the family of Stephen Girard Lax, who was chairman of the Board of Managers of Swarthmore College from 1971 to 1976.

The Stephen Girard Lax '41 Scholarship was established in 1977 by family, friends, and business associates of Stephen Lax. The scholarship is awarded on the basis of financial need every two years to a student entering the junior year who shows academic distinction, leadership qualities, and a definite interest in a career in business.

The Alfred and Harolyn Lazarus Scholarship was established in 2008 by their son, Lewis H. Lazarus '78, in honor of his parents' boundless curiosity, great respect for intellectual excellence, high moral character, and service to others. The scholarship is awarded to students on the basis of academic promise and financial need. The renewable scholarship is given with preference for students intending to practice medicine or majoring in history.

The Dorrie '44 and Henry '45 Leader Family Scholarship was established in 2001 in recognition of their many family members who attended Swarthmore College including their children, Martha '71 and Elizabeth '73. The scholarship is awarded on the basis of academic merit and financial need.

The Thomas L. Leedom Scholarship was established in 1905 by Hannah A. Leedom in memory of her husband, who always had a deep interest in the success of the College. It is awarded to a deserving student on the basis of academic merit and financial need.

The Raphael Lemkin Endowed Scholarship was established in 2005 by John '77 and Ann '77 Montgomery to honor Raphael Lemkin, a Holocaust survivor who invented the word "genocide" and drafted the Genocide Convention of the United Nations, adopted in 1948. The scholarship is awarded with preference for "upstanders" or students who demonstrate interest in human rights, especially anti-genocide work.

The Gerry and Marguerite Lenfest Scholarship was established in 2008. The renewable scholarship is awarded to students on the basis of academic merit and financial need.

The Walter H. Leser '49 Memorial Scholarship was established by his wife, Martha E. Leser, in 2002. The renewable scholarship is awarded on the basis of academic merit and financial need with preference for students majoring in mathematics.

The Carl M. Levin '56 Scholarship was created by an anonymous donor in 2000. The renewable scholarship is awarded to a student with merit and need who has overcome obstacles, with a preference for Michigan public high school graduates.

The Beryl and Leonard Levine Scholarship was established by their daughter, Susan Brauna Levine '78, in 2005 and is awarded on the basis of academic merit and financial need.

The Wilma A. Lewis '78 Scholarship was established in 2006 by Wilma A. Lewis. This scholarship is awarded on the basis of academic merit and financial need.

The Lewis–Bill Scholarship was established in 2009 by Robert J. Reynolds, father of Sarah Reynolds '09, to honor his wife, Lucinda M. Lewis '70, and her parents, Robert B. '35 and Margaret Bill '38 Lewis. It is awarded to students on the basis of academic merit and financial need.

The Scott B. Lilly Scholarship, endowed by Jacob T. Schless of the Class of 1914 and offered for the first time in 1950, is awarded annually in honor of a former distinguished professor of engineering. Students who plan to major in engineering are given preference.

The Sarah E. Lippincott Scholarship, established in 1918 by Katherine Lippincott Holden in memory of her mother, is awarded to a deserving student on the basis of financial need.

The Lloyd Family Scholarship was established in 2000 by May Brown Lloyd '27, G. Stephen Lloyd '57, and Anne Lloyd '87. The renewable scholarship is awarded with preference given to a student who shows great promise.

The Lloyd-Jones Family Scholarship is the gift of Donald '52 and Beverly Miller '52 Lloyd-Jones and their children Anne '79; Susan '84; Donald '86; and Susan's husband, Bob Dickinson '83. Established in 1990, the renewable scholarship is awarded on the basis of academic merit and financial need.

The Amy Chase Loftin '29 Scholarship was established in 1998. The renewable scholarship is awarded to a sophomore, with preference given to Native Americans and African Americans.

The Joan Longer '78 Scholarship was created as a memorial in 1989 by her family, classmates, and friends, to honor Joan's personal courage, high ideals, good humor, and grace. The renewable scholarship is awarded on the basis of merit and need.

The Mary T. Longstreth Scholarship was established in 1938 by Rebecca C. Longstreth in memory of her mother, who served on the Board of Managers from 1872 to 1887. The scholarship is awarded to a deserving student on the basis of financial need.

The David Laurent Low Memorial Scholarship was established in 1981 by Martin L. Low '40; his wife, Alice; Andy Low '73; and Kathy Low in memory of their son and brother. It is awarded to a man or woman who shows the

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great promise that David himself did. The award assumes both need and academic excellence and places emphasis, in order, on qualities of leadership and character or outstanding and unusual promise. The renewable scholarship is awarded to a first-year student.

The Lyman Scholarship was established by Frank L. Lyman Jr. '43 and his wife, Julia, on the occasion of his 50th reunion in 1993. The renewable scholarship is awarded on the basis of financial need to a student who is a member of the Religious Society of Friends or whose parents are members of the Religious Society of Friends.

The Leland S. MacPhail Jr. '39 Scholarship, given by Major League Baseball in 1986 in recognition of 48 years of dedicated service by Leland S. MacPhail Jr., is awarded annually to a deserving student on the basis of need and merit.

The Magill Walk Scholarship was established in 2010 by an anonymous donor. The scholarship shall be awarded to students on the basis of academic merit and financial need and is renewable.

The David Mailloux Endowed Scholarship was established in 2005 by his loving parents to celebrate David's life and memory. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Clara B. Marshall Scholarship was established in 1982 by the estate of Dr. Clara Marshall. Clara Marshall was a Philadelphia-area physician and educator from a prominent Quaker family whose leadership as dean of the Women's Medical College led to greatly expanded and improved facilities and course offerings at that institution. The scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The Edward Martin Scholarship, established by a bequest from Edward Martin, a professor of biological sciences at the College, is awarded to a junior or senior with preference for a biology major or premedical student.

The Jacob and Rae Mattuck Scholarship, created in 2009 by Arthur P. Mattuck '51 in honor of his parents, is renewable and awarded to students based on academic merit and financial need with preference for majors in the sciences, mathematics, statistics, computer science, engineering, music, or the arts.

The Franz H. Mautner Scholarship honors the memory of this Professor Emeritus of German and is awarded to a student who has demonstrated financial need.

The Thomas B. McCabe '15 Awards, established in 1952 by Thomas B. McCabe, are awarded to entering students. Regional McCabe Scholarships are awarded to a few students

from the Delmarva Peninsula and from southeastern Pennsylvania (Chester, Montgomery, and Delaware counties). These awards provide a minimum annual scholarship of full tuition or a maximum to cover tuition, fees, room, and board, depending on need. The National McCabe Scholarships are awarded to a few students based on financial need. In making selections for all McCabe Scholarships, the committee places emphasis on ability, character, personality, and service to school and community.

The Charlotte Goette '20 and Wallace M. McCurdy Scholarship is awarded to a first-year student on the basis of financial need and academic merit. The renewable scholarship was endowed by Charlotte McCurdy in 1986.

The Cornelia Dashiell and Dino Enea Petech '35 McCurdy, M.D., Family Scholarship was endowed by Cornelia and Dino E.P. McCurdy, M.D. The scholarship is awarded each year to a well-rounded student with need who demonstrates academic and extracurricular interests based upon sound character and healthy personality traits, with preference given to graduates of George School.

The Dorothy Shoemaker '29 and Hugh '30 McDiarmid Scholarship is awarded to a first-year man or woman on the basis of academic merit and financial need. Established in 1987, the renewable scholarship is the gift of the McDiarmid family in commemoration of their close association with Swarthmore College.

The Helen Osler McKendree '23 Scholarship, created in 1998 by the estate of Helen's brother, E. Morgan Osler, is awarded to a junior majoring in a foreign language or languages.

The Sarah Meade McKitterick Scholarship was established in 2006 by Katherine Burt Anderson '49 to honor the memory of her daughter. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Donald R. McMinn '86, Robert '57, and Tamzin MacDonald '58 McMinn Scholarship was created in 2004 and is awarded on the basis of academic merit and financial need, with preference for students planning a career in business.

The Margaret S. Meeker '45 Scholarship was established in 2005 by Douglas F. Bushnell, Rebecca W. Bushnell '74, and John D. Toner '73 in memory of Peggy Meeker, wife and mother, who was full of love and life and who was so happy during her years at Swarthmore College. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Norman Meinkoth Scholarship was established in 1988 by his friends and former students to honor Dr. Norman A. Meinkoth, a member of the College faculty from 1947 to

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1978 who died in 1987. This scholarship serves as a memorial and is awarded annually to a worthy student with an interest in the study of biological problems in a natural environment.

The Alison Joanna Meloy '94 Memorial Scholarship was established in 2006 by her mother and stepfather, Alice and Robert Deal. The scholarship celebrates Alison's love of Swarthmore College and recognizes that some of her happiest years were spent there. The renewable scholarship is awarded on the basis of academic merit and financial need, with a preference for female students majoring in political science.

The Peter Mertz '57 Scholarship is awarded to an entering first-year student outstanding in mental and physical vigor, who shows promise of using these talents for the good of the College community and of the larger community outside. The renewable scholarship was established in 1955 by Harold '26, LuEsther, and Joyce '51 Mertz in Peter's memory.

The Mari Michener Scholarship provides financial support to four students on the basis of academic merit and financial need. The scholarship is the gift of James Michener '29 and honors his wife.

The Bruce and Florence Miller Scholarship was established in 2006 by their son, Grant Miller '65, to honor his parents' lifetime commitment to education and underserved communities. The renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to students with sensitivity toward diverse underserved communities.

The James E. Miller Scholarship, established by a bequest from Arabella M. Miller in 1924, is awarded to a deserving student on the basis of financial need.

The James H. Miller '58 Scholarship will be established with a gift from the estate of James H. Miller and awarded on the basis of academic merit and financial need.

The Hajime Mitarai Scholarship, established in 1995 by Eugene M. Lang '38 in memory of his close friend and the father of Tsuyoshi Mitarai '98, is awarded to students with financial need. Preference is given to students with international backgrounds.

The Margaret Moore Scholarship, established in 1974 by an anonymous donor, provides scholarships to foreign students, with a preference given to students of South Asian origin. This scholarship honors a Quaker teacher who spent a lifetime of teaching and public service in western India with the people she loved until her death in 1962.

The Kathryn L. Morgan Scholarship was established by an anonymous donor in 2000. The renewable scholarship was created in

recognition of Professor Morgan's distinguished teaching and scholarly contributions to the life of the College. Preference is given to students with an interest in black studies.

The Robert '67 and Joan Murray Scholarship was created in 2004 and is awarded on the basis of academic merit and financial need.

The Thomas W. Nash '74 Scholarship was established in 2006. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Florence Eising Naumburg Scholarship was named in 1975 in honor of the mother of an alumna of the Class of 1943. The scholarship is awarded to a student whose past performance gives evidence of intellectual attainment, leadership, and character and who shows potential for future intellectual growth, creativity, and scholarship and for being a contributor to the College and, ultimately, to society.

The Albert and Christine Nehamas Scholarship was established in 2004 by Alexander Nehamas '67 and Susan Glimcher in loving memory of Alexander's parents, who strove to provide a sound education for their son. The scholarship is awarded on the basis of academic merit and financial need, with preference for students from Greece or from other foreign countries.

The Thomas S. '30 and Marian Hamming '30 Nicely Scholarship was established in 1987 and is awarded to a first-year student with need who shows promise of academic achievement, fine character, and athletic ability. Preference is given to a person who has been on the varsity tennis, squash, golf, or swimming teams in high school or preparatory school.

The Mary McCusker Niemczewski Scholarship was established in 2005 by Christopher M. Niemczewski '74 to honor his mother and is awarded on the basis of academic merit and financial need.

The John H. Nixon '35 Scholarship was established in 1983 by John H. Nixon to assist Third World students, especially those who plan to return to their country of origin.

The Donald E. Noble Scholarship was established in 2002 by the Donald E. and Alice M. Noble Charitable Foundation. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Helen North Scholarship was established in 2002 by Maureen Cavanaugh '75 and Christopher Plum '75 in honor of Helen F. North, who, at the time of her retirement from Swarthmore in 1991, was the Centennial Professor of Classics and had been a member of the College faculty for 43 years. Author, traveler, lecturer, and beloved friend, Helen North has always been committed to teaching in

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a culturally diverse educational community. The scholarship is awarded on the basis of academic merit and financial need.

The Northwest Scholarship was established in 1990 by Constance Gayl Pious '53 to offer financial aid to students from the northwestern United States.

The Edward L. Noyes '31 Scholarship was endowed in 1987 in his memory by his wife, Jean Walton Noyes '32; his three sons; and his many friends. The scholarship is available to an incoming first-year student, with preference given to those from the Southwest, especially Texas. The renewable scholarship is awarded on the basis of financial need and academic merit to students with broad interests.

The Nancy Triggs Ohland '55 Scholarship was established in her memory in 2006 by her husband, Theodor C. Ohland, and children Karen J. Ohland '83, Matthew W. Ohland '89, and Erik D. Ohland. The scholarship is awarded on the basis of academic merit and financial need, with preference given to a student with a strong record of community service.

The Howard Osborn Scholarship, established by a bequest in 1970 to honor the memory of his parents, Viola L. and Frank Osborn, is awarded to a deserving student on the basis of academic merit and financial need.

The Mark L. Osterweil '94 Memorial Scholarship was established by his family and friends. Mark was an ardent student of European and American history, with a special interest in the economic, intellectual, political, and social relationships and connections between the United States and other countries, peoples, and cultures. Preference in awarding the scholarship is given to American or foreign students whose studies of history are consistent with Mark's wide-ranging interests.

The Martin Ostwald Scholarship was established in 2005 by Christopher Plum '75 in memory of his beloved wife, Maureen Cavanaugh '75. The scholarship is named in honor of Martin Ostwald, the Swarthmore classics professor who had a tremendous lifelong impact on Maureen's development as a classics and legal scholar. It is awarded on the basis of academic merit and financial need, with a preference for classics students, particularly those studying ancient history or philosophy.

The Page-Pixton Scholarship for Study Abroad, established in 2003, is awarded yearly on the basis of financial need to rising juniors or seniors who seek through study abroad experience to prepare themselves to become effective leaders of a more inclusive, generous, and peaceful world.

The Harriet W. Paiste Scholarship was established by a bequest in 1900 to assist those whose limited means would exclude them from

enjoying the advantages of an education at this college.

The Rogers Palmer '26 Scholarship, established in 1973, is awarded to a deserving student on the basis of academic merit and financial need.

The Susanna Haines Parry, Class of 1908 and Beulah Haines Parry, Class of 1909

Scholarship, established by a bequest in 1979, is awarded to a deserving student on the basis of academic merit and financial need.

The Tory Parsons '63 Scholarship was established in 1991 in his memory by a member of the Class of 1964 to provide scholarship aid to students with demonstrated need.

The Sibella Clark Pedder '64 Endowment was established in 2005 to enable American students through study abroad to develop deeper understanding of, and improved facility with, a global world. The income from the fund is awarded only to students who qualify for financial aid on the basis of their financial need.

The J. Roland Pennock '27 Scholarships were established in 1973 by Ann and Guerin Todd '38 in honor of J. Roland Pennock, Richter Professor Emeritus of Political Science. Income from this endowment is to be used to award four scholarships on the basis of merit and need, preferably to one scholar in each class.

The T.H. Dudley Perkins, Class of 1906, Scholarship was established in 1920 by his wife, Alice Sullivan Perkins 1904, and other family members and friends to honor the memory of one who died in the service of his country in 1918. The scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The Perry Family Scholarship was created in 2006. Four generations of the Perry family have attended Swarthmore College. At Swarthmore, the Perrys pursued diverse academic paths and participated in team sports. After graduation, they became educators, physicians, and scientists. The Perry Family Scholarship is awarded with preference for a well-rounded premedical student who demonstrates strong academic achievement along with an interest in student life and community service. The scholarship, which may be renewed, is awarded to a student entering his or her junior year.

The Winnifred Poland Pierce '45 Scholarship was established in 1988. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to students who are the first generation in their families to attend college.

The Cornelia Chapman '26 and Nicholas O. Pittenger Scholarship, established in 1961 by their family, is awarded to an incoming first-year student who ranks high in scholarship, character, and personality and needs financial assistance. Cornelia, an honors graduate, was

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active in alumni activities and served on the Alumni Council from 1945 to 1949. Nicholas ("Pitt") was the controller of the College for 22 years.

The Frances Hughes Pitts Scholarship was established in 2003 by George R. Pitts '72 in honor and memory of his mother. The renewable scholarship is awarded on the basis of academic merit and financial need with a preference given to students with an interest in the sciences.

The Rebecca Kemp and Richard Pogir Scholarship was established in 2009 on the occasion of their marriage as a gift from the bride's parents, Barbara Guss Kemp and Giles Kemp '72. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to a student from South Africa or Africa or with an academic interest in these areas.

The Anthony Beekman Pool '59 Scholarship, established by his family and friends in 1958, is awarded to an incoming first-year man of promise and intellectual curiosity. It is given in memory of Tony Pool, who died of pneumonia in his senior year.

The Ramon L. Posel Scholarship was established in 2005. The scholarship is awarded on the basis of academic merit and financial need.

The Richard '36 and Helen Shilcock '36 Post Scholarship was established in 1995 by Helen Shilcock Post, Bill '61 and Suzanne Rekeate '65 Post, Carl '66 and Margery Post '67 Abbott, Barbara Post Walton, Betsy Post Falconi, Richard W. '90 and Jennifer Austrian '90 Post, and their families. The renewable scholarship is awarded to a well-rounded first-year student who demonstrates academic merit, financial need, and an interest in athletic endeavors.

The Elizabeth Carver Preston, Class of 1934, Memorial Scholarship was established in 2001 by the family of Elizabeth "Beth" Preston in recognition of her devotion to Swarthmore College. For Beth, who was a scholarship student, Swarthmore College opened a new world, stimulating her intellectually and introducing her to lifelong friends, including her husband. Her commitment to the College continued after graduation with years of participation in College events and service as an alumna, including several terms on the Board of Managers. Her heartfelt enthusiasm about Swarthmore encouraged numerous young people to consider the College for themselves. In this scholarship, Beth's spirit lives on by enabling others to experience the college life she so cherished. The Preston Scholarship is renewable and awarded on the basis of demonstrated financial need.

The Mary Coates Preston Scholarship, established in 1942 by a bequest from Elizabeth Coates, is awarded to a deserving student on the basis of academic merit and financial need.

The David L. Price '31 Scholarship, established in 1975 by a bequest from this alumnus, is awarded to a deserving student on the basis of academic merit and financial need.

The Henry L. Price Jr., M.D., '44 Scholarship was established in 1994 by Hal and Meme Price. The renewable scholarship, awarded on the basis of merit and need, is given to a student who has declared the intention to choose a major in the Division of Natural Sciences other than engineering. This scholarship is in memory of Dr. Price's parents, Sara Millechamps Anderson and Henry Locher Price.

The Robert Pyle, Class of 1897, Scholarship was established in 1964 by Margery Pyle, Class of 1900, and Ellen Pyle Groff, Class of 1892, in memory of their brother who served for many years on the Board of Managers.

The Martin S. and Katherine D. Quigley Scholarship was established in 2000 by their son, Kevin F. F. Quigley '74, in honor of his parents' steady commitment to family, lifetime learning, and international understanding. The renewable scholarship is awarded each year on the basis of academic merit and financial need. Preference is given to outstanding international students attending Swarthmore.

The Jed S. Rakoff '64 Scholarship was created by an anonymous donor in 2005, in recognition of the benefits of an independent judiciary. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference for students who have demonstrated an interest in public affairs.

The Raruey-Chandra and Niyomsit Scholarships were established in 1980 by Renoo Suvarnsit '47 in memory of his parents. They are awarded in alternate years: the Raruey-Chandra Scholarship to a woman for her senior year and the Niyomsit Scholarship to a man for his senior year, to a student of high academic standing and real need for financial aid. Preference is given to a candidate who has divorced or deceased parents.

The George G. and Helen Gaskill '18 Rathje Scholarship, established by a bequest in 1985, is awarded to a deserving student on the basis of academic merit and financial need. Helen was a writer and a college drama teacher. Her husband was a professor of German.

The Reader's Digest Foundation Endowed Scholarship, created in 1959, is awarded to a deserving student on the basis of academic merit and financial need.

The Mark E. Reeves Scholarship was established in 1905, when Caroline E. Reeves of Richmond, Ind., gave to Swarthmore College

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the sum of \$5,000 for the purpose of founding a scholarship in memory of her husband who "was one of the first subscribers to the College and always had a deep interest in its success." The fund is part of the general scholarship fund.

The Fred C. and Jessie M. Reynolds Scholarship, established in 1984 by a bequest from Jean Reynolds '32, is awarded to a deserving student on the basis of academic merit and financial need.

The Lily Tily Richards '29 Scholarship was established in 1963 by Peirce L. Richards Jr. '27 in memory of his wife, who was active in Swarthmore alumni activities. This scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The Adele Mills Riley '37 Memorial Scholarship, established in 1964 by her husband, John R. Riley, is awarded to a deserving student on the basis of academic merit and financial need.

The Lewis M. Robbins '40 Scholarship was established by Lewis M. Robbins in 2002. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Michael J. Robbins Living Memorial Endowed Scholarship was established anonymously in 2007 to celebrate the memory of Michael J. Robbins and to recognize the important role scholarships play in assisting talented students with substantial financial need to receive a Swarthmore College education. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Byron T. Roberts, Class of 1912, Scholarship, endowed in 1973 by his family in memory of Byron T. Roberts, is awarded annually to an incoming student and is renewable.

The Louis N. Robinson, Class of 1905, Scholarship was established in 1964 during the College's centennial year by the family and friends of Louis N. Robinson. Mr. Robinson was for many years a member of the Swarthmore College faculty and founder of the Economics Discussion Group. A member of the junior or senior class who has demonstrated interest and ability in the study of economics is chosen for this award.

The Edwin P. Rome '37 Scholarship provides financial assistance to worthy students with financial need. The scholarship was established in 1987 in memory of Edwin P. Rome by his wife, Rita Rome, and The William Penn Foundation, on whose board he served.

The Matthew Rosen '73 Scholarship was established in 2004 and is awarded on the basis of academic merit and financial need.

The Alexis Rosenberg Scholarship, established in 1983 by The Alexis Rosenberg Foundation,

now the Alexis Rosenberg Fund of the Greenfield Foundation, provides aid for a first-year student. The scholarship is awarded annually to a worthy student who could not attend the College without such assistance.

The Girard Bliss Ruddick '27 Scholarship was established in 1987 by J. Perry Ruddick in memory of his father. The renewable scholarship is awarded to a junior on the basis of academic merit and financial need, with preference given to an economics major.

The Charles F. C. Ruff '60 District of Columbia Scholarship memorializes distinguished alumnus Charles F. C. Ruff, who died in 2000. Preference is given to students with financial need who live in the District of Columbia.

The Edith A. Runge '38 Scholarship, created in 1971 by a bequest from her estate, is awarded to a deserving student on the basis of academic merit and financial need. A professor, Edith Runge chaired the German Department at Mount Holyoke College at the time of her death.

The David Barker Rushmore, Class of 1894, Scholarship, established in 1974 in honor of David Barker Rushmore by his niece Dorothea Rushmore Egan '24, is awarded annually to a worthy student who plans to major in engineering or economics.

The Carl E. Russo '79 Business Scholarship was established in 2000 and financially supports rising sophomores, juniors, and seniors with a strong and expanding interest in business and entrepreneurship. The renewable scholarship is awarded on the basis of financial need and academic merit.

The Bernard Saffran Legacy Scholarship honors Bernie Saffran's contribution to making Swarthmore a place to pursue academic passions without forgetting an obligation to strive for a better world. Established in 2008, the scholarship is awarded on the basis of academic merit and financial need, with preference given to students with an interest in economics, political science, or philosophy.

The Professor Bernard "Bernie" Saffran Scholarship was created in 2005 by students, colleagues, and friends in honor and memory of Bernie Saffran, distinguished economist, gifted teacher, international mentor, raconteur, and treasured member of the Swarthmore College faculty from 1967 to 2004. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to economics majors with an interest in public policy.

The William B. Sailer '82 Scholarship was created in 2004 and is awarded on the basis of academic merit and financial need.

The Richard B. Saltzman '77 Scholarship was established in 2006 by Richard B. Saltzman.

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This renewable scholarship is awarded on the basis of academic merit and financial need.

The Amelia Enhardt Sands '31 Scholarship, created in 1995 by a bequest from her estate, is awarded to a student who has demonstrated financial need.

The Katharine Scherman '38 Scholarship is awarded to a student with a primary interest in the arts and the humanities who has special talents in these fields. Students with other special interests, however, will not be excluded from consideration. Established in 1963 by her husband, the renewable scholarship honors Katharine Scherman.

The Peter '57 and David '58 Schickele Scholarship was established by an anonymous donor in 2000. Named for Peter and in memory of his brother, David, it is awarded on the basis of academic merit and financial need. Preference is given to students from the Native American community in the plains, desert, and mountain states west of the Mississippi River.

The Schmidt/Lyman Scholarship, established in 2005, is awarded on the basis of academic merit and financial need. The scholarship is renewable.

The Walter Ludwig Schnaring Scholarship was established in 1998 by a gift from the estate of Helen Hillborn Schnaring, in memory of her husband. This renewable scholarship is unrestricted.

The Schneck Family Scholarship was established in 2001 by Jennifer Schneck '83. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Howard A. Schneiderman '48 Scholarship, established in 1991 by his family, is awarded to a first-year student and is renewable. Preference is given to students with an interest in the biological sciences.

The Schoenbaum Family Scholarship was established in 2003 by Stephen B. Schoenbaum '62. It is awarded on the basis of academic merit and financial need and is renewable. Preference is given to first-generation college students.

The Gustavo R. Schwed '84 and Lucy E. Harrington '85 Scholarship was established in 2006 by Gus Schwed and Lucy Harrington. The renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to economically disadvantaged students who represent the first generation in their families to attend college.

The William G. and Mary N. Serrill Honors Scholarship, created in 1931 through a gift from William's estate, is awarded to a deserving student on the basis of financial need.

The Clinton G. Shafer '51 Scholarship, established in 1964 by his family, is awarded to

a deserving student on the basis of academic merit and financial need, with preference given to engineering and physical science majors.

The Joe '25 and Terry Shane Scholarship was created in 1986 in honor of Joe Shane, who was vice president of Swarthmore College's Alumni, Development, and Public Relations from 1950 to 1972, and his wife, Terry, who assisted him in countless ways in serving the College. The renewable scholarship was established by their son, Larry Shane '56, and his wife, Marty Porter Shane '57, in remembrance of Joe and Terry's warm friendship with generations of Swarthmore alumni. This award is made to a first-year student on the basis of academic merit and financial need.

The Roy J. '70 and Linda G. Shanker Scholarship was established in 2006. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Leonard Shapiro Scholarship was established in 2004 by his son, Robin Marc Shapiro '78. The award assumes both academic excellence and financial need and is awarded to a first-year student who shows great promise. Preference for this renewable scholarship is given to a student who is the first generation of his or her family to attend a college or university in the United States.

The Felice K. Shea '43 Scholarship was established in 2004 by an anonymous donor and honors the Honorable Felice K. Shea, who has dedicated her life to issues of justice and public service throughout her 25 years on the bench and her work with the Legal Aid Society of New York. The renewable scholarship is awarded on the basis of academic merit and financial need with preference for a student looking toward a career in public service.

The Philip Shen and Sylvia Lo Shen Scholarship was established in 2006 by an anonymous donor to honor the parents of the donor's classmate, Kairos Shen '87. This renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to Chinese students who are not U.S. citizens and students interested in religious studies.

The Florence Creer Shepard '26 Scholarship, established in 1988 by her husband, is awarded on the basis of high scholastic attainment, character, and personality.

The Caroline Shero '39 Endowed Scholarship, established on the occasion of her retirement from Swarthmore College in 1982, is awarded to a student who has demonstrated financial need.

The Annie Shoemaker Scholarship was created in 1899 and honors the memory of a member of the Board of Managers who served from 1876

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to 1883 and 1891 to 1903. The scholarship is awarded to a student on the basis of financial need.

The Sarah W. Shreiner Scholarship, given in 1965 in loving memory by her daughter, Leah S. Leeds '27, is awarded to a deserving student on the basis of academic merit and financial need. Leah created the scholarship because she was "able to finish at Swarthmore due to someone's kindness in making money available" when her father fell ill and her family suffered extreme financial hardship.

The Barbara L. '86 and Salem D. Shuchman '84 Scholarship, created in 2000, is awarded to a junior or senior who intends to enter the teaching profession. The recipient is chosen by the Financial Aid Office in consultation with the faculty of the Educational Studies Department at Swarthmore College.

The William C. '47 and Barbara Tipping '50 Sieck Scholarship was established in 1979 by the Siecks and is awarded annually to a student showing distinction in academics, leadership qualities, and extracurricular activities and who indicates an interest in a career in business.

The Gary J. Simon '79 Scholarship was established in 2002. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Walter Frederick Sims, Class of 1897, Scholarship, established in 1975 by a gift from the estate of Florence Sims, is awarded to a deserving student on the basis of academic merit and financial need.

The Daniel M. Singer '51 Endowed Scholarship was established in 2005 by Maxine Frank Singer '52 in honor of her husband. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Rose and Simon Siskin Scholarship was established in 2004 in loving memory by their family to provide financial aid on the basis of academic merit and financial need.

The Virginia L. '40 and Robert C. Sites Scholarship, established in 2003 by a bequest from Virginia Sites, is awarded to a deserving student on the basis of academic merit and financial need.

The Nancy Baxter Skallerup Scholarship was established in 1982 by her husband and children. The renewable scholarship is awarded to a first-year student with financial need.

The Ann Brownell Sloane '60 Scholarship was established in 2002 by Ann Brownell Sloane. Preference is given to a student majoring in history.

The William W. Slocum '43 Scholarship was established in 1981 and is awarded to a deserving student on the basis of academic merit and financial need.

The Courtney C. Smith Scholarship, established in 1987 by the Smith family and members of the Class of 1957, is for students who best exemplify the characteristics of Swarthmore's ninth president: intellect and intellectual courage, natural dignity, humane purpose, and capacity for leadership. Normally, the award is made to a member of the first-year class on the basis of merit and need. Recipients of this renewable scholarship gain access to a special file in the Friends Historical Library left by the scholarship's creator, the Class of 1957, inviting them to perpetuate the memory of this individual's 16 years of stewardship of the College's affairs and his tragic death in its service.

The W.W. Smith Charitable Trust provides scholarships to qualifying students from the five surrounding counties in the Philadelphia area. The Smith Charitable Trust has contributed significant annual funds (as opposed to endowed funds) to Swarthmore student scholarships over many years.

The Elizabeth Thorn Snipes Scholarship was established in 2004 by Jim Snipes '75. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to students majoring in religion or philosophy.

The Harold E. '29 and Ruth Calwell Snyder Premedical Scholarship, the gift of Harold E. Snyder in 1992, provides support up to full tuition and fees for junior or senior premedical students and is awarded on the basis of academic merit and financial need.

The Cindy Solomon Memorial Scholarship was created in 1979 by her parents, Mary and Frank Solomon, Jr. '50. It is awarded with preference given to a young woman in need of financial assistance who has a special talent in poetry or other creative and imaginative fields.

The Frank Solomon Memorial Scholarship was created in 1955 by family, friends, and the Joseph & Feiss Company Charity Fund. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Frank Solomon Jr. '50 Scholarship was established in 2004. The scholarship is awarded on the basis of academic merit and financial need.

The Helen Solomon Scholarship was given in 1988 in her memory by her son, Frank Solomon Jr. '50. The renewable scholarship is awarded to a first-year student on the basis of merit and need.

The Babette S. Spiegel '33 Scholarship, given by her family in 1972 in memory of Babette S. Spiegel, is awarded to a student showing very great promise as a creative writer (in any literary form) who has need of financial

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assistance. The English Department assists in the selection.

The William T. '51 and Patricia E. Spock Scholarship was established in 2000 by Thomas E. '78 and Linda M. Spock. This renewable scholarship is awarded with preference given to a man or woman majoring in mathematics or the fine arts.

The Harry E. Sproggell '32 Scholarship, established in 1981 in memory of Harry E. Sproggell '32 in honor of his class's 50th reunion, is awarded to a junior or senior with financial need who has a special interest in law or music.

The Mary L. Sproul, Class of 1907, Scholarship was established by a bequest in 1949 from this alumna, cousin of former Pennsylvania governor, William Sproul. The scholarship is awarded to a deserving student on the basis of academic merit and financial need.

The Helen E. W. Squier Scholarship, created in 1892, provides financial aid to a student with need.

The Helen G. Stafford '30 Scholarship, established by a bequest from the estate of her sister, Anna R. Stafford, is awarded to a deserving student on the basis of financial need.

The C. V. Starr Scholarship, established in 1988 by The Starr Foundation as a memorial to its founder, provides scholarship assistance on the basis of academic merit and financial need.

The David Parks Steelman Scholarship, established in his memory in 1990 by C. William '63 and Linda G. Steelman, is awarded annually to a deserving male or female student on the basis of academic merit and financial need, with preference given to someone showing a strong interest in athletics.

The Stella Steiner Scholarship was established in 1990 by Lisa A. Steiner '54 in honor of her mother. The renewable scholarship is awarded to a first-year student on the basis of academic merit and financial need.

The Anne C. Stephens and Janaki Ramaswamy Scholarship was established in 2006 by Christianna Strohbeck '80 and Ramaswamy Murari. The renewable scholarship is awarded on the basis of academic merit and financial need. Preference is given to students who demonstrate a commitment to teaching or counseling to develop the human and intellectual potential of others.

The Morris and Pearl Donn Sternlight Scholarship, established by their son, Peter D. Sternlight '48, in 2005, is awarded on the basis of academic merit and financial need.

The Thomas D. '87 and Kathleen B. '87 Stoddard Scholarship was established in 2004. This gift of restricted endowment funds is

awarded on the basis of academic merit and financial need.

The Clarence K. Streit Scholarship, established in 1975, is awarded to a student entering the junior or senior year and majoring in history. Preference is given to persons, outstanding in initiative and scholarship, who demonstrate a particular interest in early American history. This scholarship honors Clarence K. Streit, author of *Union Now: A Proposal for an Atlantic Federal Union of the Free*, whose seminal ideas were made public in three Cooper Foundation lectures at Swarthmore.

The Francis Holmes Strozier '57 Memorial Scholarship, created in 1956 by his parents following his death, is awarded to a deserving student on the basis of academic merit and financial need.

The Joseph T. Sullivan Scholarship, established by a bequest in 1922, is awarded to a deserving student on the basis of academic merit and financial need.

The Solon E. Summerfield Endowed Scholarship, established in 1991 by the Summerfield Foundation, is awarded on the basis of academic merit and financial need with a preference for students from the Midwest.

The Swarthmore College Asian Scholarship was established in 2003 by Ahna Dewan '96, Terence Graham '94, Bruce Wook Han '86, George Hui '75, Min Lee '00, Thomas Lee '73, Benjamin Su '96, Mark Tong '99, Quoc T. Trang '93, Stephanie Wang '99, and Michael Yu '88. The scholarship is awarded on the basis of financial need and academic excellence (or potential for academic excellence) to Swarthmore College students of Asian ancestry (excluding U.S. nationals).

The Katharine Bennett Tappen, Class of 1931, Memorial Scholarship was established in 1979 by her sister, a member of the Class of 1928, and is awarded to a first-year student. The scholarship is renewable for four years at the discretion of the College. Preference is given to a resident of the Delmarva Peninsula.

The Newton E. Tarble, Class of 1913, Award, established in 1961 by Newton E. Tarble, is granted to a first-year man who gives promise of leadership, ranks high in scholarship, character, and personality, and resides west of the Mississippi River or south of Springfield, Ill.

The Julia Fishback Terrell '45 Scholarship was established in 2004 by Burnham Terrell '45 in honor and memory of Julia Terrell. The renewable scholarship is awarded on the basis of academic merit and financial need with a preference given to students with potential for service to the College.

The John S. Thayer Endowed Scholarship was established by a bequest from this friend of the

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College in 2007. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Phoebe Anna Thorne Memorial Scholarship was established by a Thorne family member in 1911. Preference is given to members of the New York Quarterly Meeting of the Religious Society of Friends. The scholarship is renewable.

The Titus Scholarship was established by a bequest from Georgiana Titus, Class of 1898, and is awarded to a deserving student on the basis of academic merit and financial need.

The David Todd '38 Scholarship was established in 2004 in his memory by his daughter, Rebecca Todd Lehmann '64, and her husband, Scott K. Lehmann '64. The scholarship is awarded on the basis of academic merit and financial need with preference for a student in the natural sciences.

The Jean Goldman Todd and Alden Todd '39 Endowed Scholarship was established in 2002 by writer and editor Alden Todd. The late Jean Goldman Todd was a research biologist specializing in tissue culture. The renewable scholarship is awarded on the basis of academic merit and financial need with preference given to students concentrating in the life sciences.

The Patricia Trinder Scholarship, awarded on the basis of academic merit and financial need, is renewable. This scholarship was created in 2006 to honor the memory of Pat Trinder, recruitment manager and assistant director of career services (1988–2003) and secretary to the chairman of athletics (1979–1988). Pat's long career at the College was dedicated to reaching out, serving, supporting, encouraging, and being a friend to students as they navigated life at Swarthmore. She is remembered for her compassion, her larger-than-life personality, and her warmth toward others. The donors to this scholarship hope it will be awarded to a student who exemplifies this spirit.

The Audrey Friedman Troy Scholarship, established in 1964 by her husband, Melvin B. Troy '48, is awarded to a first-year man or woman. Prime consideration for this renewable scholarship is given to the ability of the prospective scholar to profit from a Swarthmore education and to be a contributor to the College and, ultimately, to society.

The Jane Hausman and Geoffrey M. B. '75 Troy Scholarship, established in 1999, is awarded annually to a deserving student on the basis of academic merit and financial need, with preference given to art history majors.

The Robert C. '36 and Sue Thomas '35 Turner Scholarship, established in 1987, is awarded to a deserving student on the basis of academic merit and financial need.

The Daniel Underhill Scholarship was established by a bequest from Edward Clarkson Wilson, Class of 1891, and a gift by Daniel Underhill, Jr. Class of 1894. The scholarship is named for Daniel Underhill and also recognizes Underhill's father's 31-year tenure on the Board of Managers. The scholarship is awarded to a deserving student on the basis of financial need.

The Vaughan-Berry Scholarship was established in 1963 by Harold S. Berry '28 and Elizabeth Vaughan Berry '28 through their estate plans to provide financial assistance to needy students.

The William Hilles Ward, Class of 1915, Scholarship was established in 1967 by family members in memory of this alumnus who served on seven committees during his years on the Board of Managers. It is awarded to a deserving student on the basis of academic merit and financial need with preference for a science major.

The Gertrude S. Weaver '38 Scholarship was endowed in her memory by her longtime friend and companion Anna Janney de Armond '32. The scholarship, renewable in the senior year, is awarded each year to a woman student planning a career in teaching, with preference given to a student who is majoring or has a special interest in German or Chinese language, literature, history, or European history.

The Ellen V. Weissman '72 Scholarship was created in 2000. The renewable scholarship is awarded annually on the basis of academic merit and financial need.

The Stanley and Corinne Weithorn Scholarship was established in 1981. The renewable scholarship is awarded with preference given to a student who has expressed a serious interest in the area of social justice and civil rights.

The Suzanne P. Welsh Scholarship was created in 2000 by an anonymous donor in recognition of outstanding administrators at Swarthmore College. The Welsh fund was established in honor of Suzanne P. Welsh, who joined the College staff in 1983 and became its treasurer in 1989 and vice president for finance and treasurer in 2002. The renewable scholarship is awarded on the basis of academic merit and financial need.

The David '51 and Anita '51 Wesson Scholarship was established on the occasion of their 50th reunion in honor of their parents, Eleanor and Castro Dabrohua and Marion and Philip Wesson. The renewable scholarship is awarded to a first-year student on the basis of academic merit and financial need. Preference is given to a student who is the first in his or her family to attend college.

The Dan and Sidney West Scholarship was established in 2003 by an anonymous donor to reflect the appreciation, respect, and affection

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that the Swarthmore College community holds for the Wests and to honor their significant accomplishments at institutional, community, and personal levels. In 2007, Dan and Sidney added funds to this endowment. The renewable scholarship is awarded on the basis of financial need and academic merit, with a preference for students from Arkansas, Oklahoma, or Texas.

The Westbury Quarterly Meeting Scholarship was created in 1874, when the Westbury Quarterly Meeting, N.Y., turned over to Swarthmore College a fund of \$5,000, called the Educational Fund belonging to the Westbury Quarterly Meeting. The scholarship is awarded to students with financial need.

The Larry E. and Myrt C. Westphal Scholarship was established by Karan Madan '91, Suzanne Buckley '89, and Jason Cummins '90, with additional gifts from other appreciative students, friends and colleagues. The scholarship honors Professor Westphal's teaching excellence and the impact he had through his microeconomics, economic development, Asian economies and environmental studies classes, and Dean Westphal's dedication and work in housing, disabilities, the Lang Scholar program and personal advising. The scholarship is awarded each year on the basis of academic merit and financial need and is renewable.

The Deborah F. Wharton Scholarship was created in 1875 and honors the mother of Joseph Wharton, who served on the Board of Managers from 1883 to 1907. The scholarship is awarded to a deserving student on the basis of financial need.

The White Family Scholarship, established in 1972, provides financial aid for a deserving student. A preference is given to students with an interest in business, economics, or engineering.

The Widdicombe Family Scholarship was established in 2006 by Stacey "Toby" Widdicombe III '74, Gerard C. Widdicombe, and Elizabeth A. Widdicombe in honor of their parents. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Frederick J. Wiest Jr. '37 and Elizabeth S. Wiest '38 Scholarship was established in 2006 and is awarded on the basis of academic merit and financial need.

The Rachel Leigh Wightman Scholarship was created in 2000 by Colin W. '82 and Anne Bauman '82 Wightman in memory of their daughter. The renewable scholarship is awarded to a gentle person whose quiet, unrelenting love of learning inspires similar passion in those around them. The scholarship is awarded on the basis of need to a worthy student.

The Erik Joseph Wilk '90 Scholarship, established in 2005, is awarded on the basis of academic merit and financial need with a preference for someone who embraces, and has a sensitivity for and acceptance of diversity, including other cultures and sexual orientations.

The Samuel Willets Scholarship was created in 1885 to honor a member of the original committee to solicit funds for "The Establishment of Swarthmore College" who also served on the Board of Managers from 1862 to 1883. The scholarship is awarded to a deserving student on the basis of financial need.

The I.V. Williamson Scholarship, established in 1885 by a gift from the sale of property by this Philadelphia merchant and philanthropist, is awarded to a deserving student on the basis of academic merit and financial need.

The Edward Clarkson Wilson and Elizabeth T. Wilson Scholarship, established in 1948 to honor the former principal of the Baltimore Friends School and his wife, is awarded to a deserving student on the basis of financial need.

The Elmer L. Winkler '52 Scholarship, established in 1980 by this alumnus, is awarded annually to a deserving student on the basis of academic merit and financial need.

The Ned Winpenny '74 Memorial Scholarship was established in 2000 by an anonymous donor. The renewable scholarship is awarded on the basis of academic merit and financial need.

The Robert Wolf '39 Scholarship was endowed in his memory by his sisters, Ruth Wolf Page '42 and Ethel Wolf Boyer '41. The renewable scholarship is awarded each year on the basis of need and merit to a junior or senior majoring in chemistry or biology.

The Letitia M. Wolverton, Class of 1913, Scholarship, given by a bequest in 1983 from Letitia M. Wolverton, provides scholarships for members of the junior and senior classes who have proved to be capable students and have need for financial assistance to complete their education at Swarthmore College.

The Mary Wood Scholarship, created through a bequest in 1898 from this Media, Pa., resident, is awarded to a deserving student on the basis of financial need.

The Roselynd Atherholt Wood '23 Scholarship, established in 1983 by this alumna, is awarded to a deserving student on the basis of academic merit and financial need.

The Thomas Woodnutt Scholarship was established in 1905 by Hannah H. Woodnutt, then a member of the Board of Managers, in memory of her husband, who had from the beginning taken a great interest in Swarthmore College.

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The Frances '28 and John '30 Worth Scholarship was established by Frances Ramsey Worth in 1993. The renewable scholarship is awarded to a first-year student with strong academic credentials and financial need.

The David Wright '65 Scholarship was established in 2005 and is awarded on the basis of academic merit and financial need.

The Elizabeth Cox Wright Endowed Scholarship was established in 2006 by Pamela Taylor Wetzels '52 to honor an outstanding, beloved teacher known for instilling a love of Shakespeare in her students and holding poetry seminars in her home. Elizabeth Cox Wright came to Swarthmore College as an instructor of English in 1930 and retired as a professor emerita of English in 1964. She died in 1973. This renewable scholarship is awarded on the basis of academic merit and financial need.

The Harrison M. Wright Scholarship was created in 1993 by friends, colleagues, and former students of Harrison M. Wright, Isaac H. Clothier Professor of History and International Relations, on the occasion of his retirement from the College. The scholarship supports a student who will study in Africa.

The Michael M. and Zelma K. Wynn Scholarship, established in 1983 by Kenneth R. Wynn '74 in honor of his mother and father, is awarded annually to a student on the basis of need and merit.

The Richard A. Yanowitch '81 Scholarship, established in 2002, reflects the donor's encouragement of student interest in international relations and cross-cultural development. The renewable scholarship is awarded on the basis of academic merit and financial need, with preference given to African Americans and other minority groups. It is hoped that during his or her time at the College, the Yanowitch scholar will study history, languages, and international cultures.

The Paul Ylvisaker H'78 Scholarship was established in 2008 by a member of the Class of 1952 to honor an articulate, inspiring, and charismatic faculty member who taught political science from 1948 to 1955. In 1978, Paul Ylvisaker returned to Swarthmore to receive an honorary degree, which recognized his contributions as a champion of cities and the urban underclass as a planner, government official, foundation executive, and educator. This scholarship is awarded to students on the basis of academic merit and financial need.

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6.1 The Residential College Community

Swarthmore College seeks to help its students realize their fullest intellectual and personal potential combined with a deep sense of ethical and social concern. The purpose of Swarthmore College is to make its students more valuable human beings and more useful members of society. The College is committed to student learning in and out of the classroom and thus supports the personal and leadership development of students through extracurricular activities.

6.1.1 Student Rights, Responsibilities, and Code of Conduct

Students are expected to familiarize themselves with the policies and rules concerning their conduct. The *Student Handbook* provides information about academic freedom and responsibility; ethical use of the library and other educational resources; standard citation practices; the information technology acceptable use policy; and the policies and procedures that guide the process when academic or behavioral misconduct is suspected.

6.2 Residential Life

Swarthmore is primarily a residential college, conducted on the assumption that the close association of students and instructors is an important element in education. Most students live in college residence halls all four years. New students are required to live in the residence halls during their first two semesters. After their first year at the College, students are permitted to live in non-College housing.

6.2.1 Housing

Seventeen residence halls, ranging in capacity from 8 to 214 students, offer a diversity of housing styles. Several of the residence halls are a 5 to 15-minute walk to the center of campus. Swarthmore's residence halls are Alice Paul; Dana; David Kemp (the gift of Giles Kemp '72 and Barbara Guss Kemp, in honor of Giles' grandfather); Hallowell; Kyle House (named in honor of Fred and Elena Kyle '55); Lodges; Mary Lyon; Mertz Hall (the gift of Harold and Esther Mertz); Palmer; Pittenger; Roberts; the upper floors in the wings of Parrish Hall; Strath Haven; Wharton Hall (named in honor of its donor, Joseph Wharton, a one-time president of the Board of Managers); Willets Hall (made possible largely by a bequest from Phebe Seaman and named in honor of her mother and aunts); Woolman House; Worth Hall (the gift of William P. and J. Sharples Worth, as a memorial to their parents).

A mixture of class years live in each residence hall. About 90 percent of residence hall areas

are designated as coeducational housing either by floor, section, or entire building. The remaining areas are single-sex housing.

Although single-sex options are offered, they are not always available and as such cannot be guaranteed. Students should not expect to live in single-sex housing for all four years. In these single-sex sections, students may determine their own visitation hours up to and including 24-hour visitation restrictions.

First-year students are assigned to rooms by the deans. Efforts are made to follow the preferences indicated and to accommodate special needs, such as documented disabilities. After the first year students choose their rooms in an order determined by a housing lottery or by invoking special options—among these are block housing, allowing friends to apply as a group for a section of a particular hall. There is also the opportunity to reside at neighboring Bryn Mawr and Haverford colleges in a cross-campus housing exchange that proceeds on a matched one-for-one basis. First- and second-year students typically reside with roommates, whereas juniors and seniors may select single rooms (as available). All students are expected to occupy the rooms to which they are assigned or which they have selected through the regular room choosing process unless authorized by the deans to move.

Resident assistants, selected from the junior and senior classes, are assigned to each of the residence halls. These leaders help create activities for students, serve as support advisers to their hallmates, and help enforce College rules for the comfort and safety of the residents.

Residence halls remain open during fall break, Thanksgiving, and spring break, but are closed to student occupancy during winter vacation. Specific winter vacation dates are set each year, but generally include a 4-5 week period from mid-December through mid-January. No meals are served during fall and spring breaks.

Guests- Friends of Swarthmore students are welcome to visit campus. If a guest of a student will be staying in a residence hall overnight, the resident assistant must be notified, and all roommates must agree to allow the guest to stay. A guest is not permitted to stay in a residence hall more than four nights each term. Residence halls are designed for our student population, and as such children, non college-aged individuals, parents, and other adults should not be overnight guests. A guest is never permitted to sleep or reside in any public location (such as a dorm lounge, basement, or other public space). Requests for exceptions must be made to the Assistant Dean for Residential Life. The Dean's Office reserves the right to require a guest to leave campus if their behavior begins to have an impact on the campus community or is otherwise disruptive.

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Student hosts are responsible for the conduct of their guests on campus and will be held accountable for any violation of the code of conduct or other rules of the College committed by a guest.

More detailed housing rules and regulations are found in the *Student Handbook*, and on the housing website:
www.swarthmore.edu/housing.

6.2.2 Storage and Insurance

Limited storage areas are provided in most residence halls; dorm storage rooms may reach capacity and be closed to students on a case-by-case basis. Insurance is not provided on items stored in dorm storage, and students store their belongings at their own risk. Students are not allowed to store any furniture or large items in these locations.

A limited amount of 'secure storage' is maintained by Public Safety and available to students on a first-come, first-serve basis. Secure storage may be accessed on scheduled days and times at the beginning and end of each semester. Each student may store up to three items, though space limitations prohibit the storage of furniture, bicycles, musical instruments, rugs, mattresses, fridges, or other large items.

The insurance program for the College is designed to provide protection for College property and does not include the property of students or others. Students and their parents are strongly urged to review their insurance program in order to be sure that coverage is extended to include personal effects while at college.

6.2.3 Dining

All students living in campus housing must participate in one of the College's three meal plans. Students living off campus may subscribe to the meal plans, or they may purchase a debit card or a five-meal plan from the Dining Services office in Sharples. The debit card may be purchased in any amount and renewed at any time. The five-meal plan allows access to Sharples for five lunches per week at a rate discounted from the cash entry fee.

Swarthmore's Dining Services oversees the main dining facility in Sharples Dining Hall, Essie Mae's Snack Bar, the Kohlberg coffee bar, the Science Center coffee bar, and the Mary Lyon's Breakfast Room.

Sharples Dining Hall is open Monday through Friday, 7:30 a.m. to 7:15 p.m.; Saturday, 7:30 a.m. to 6:30 p.m.; and Sunday, 10 a.m. to 6:30 p.m. Unlimited servings are permitted, but take-out is not. Although a sincere effort is made to meet the dietary needs of all students, not all special requirements can be accommodated.

Kosher meals are not available in the dining hall.

Essie Mae's Snack Bar, the Kohlberg coffee bar, and the Science Center coffee bar are cash operations. Students may use their meal equivalency at Essie Mae's. Points are accepted at all three locations.

Mary Lyon's Breakfast Room serves a hot breakfast on Saturday and Sunday, which is prepared by students. Mary Lyon's residents and guests may use regular meal credit to partake in the weekend breakfast.

Swarthmore students may obtain passes to eat at the Bryn Mawr and Haverford college dining halls. Students may also arrange to have raw ingredients packed for cook-outs and special meals as a substitute for meals. Please see the dining hall staff for details.

Students eating in all college dining locations must present their college picture identification card for meal credit or points. These policies are in effect to protect each student's personal meal plan account.

6.2.4 Parking

Parking is very limited on Swarthmore's campus. Students should not plan on being approved for parking for more than one year during their time at Swarthmore. Students must have the permission of the Car Authorization Committee to park on campus and should apply in the spring term for the following academic year. Students who live off-campus in the Swarthmore Borough can secure street parking through Borough Hall, and are not generally eligible for campus parking spots. First-year students are not permitted to bring cars to campus.

6.3 Health

6.3.1 Worth Health Center (WHC)

The WHC services are available 24 hours a day, 7 days a week when the College is in session. The center, a gift of the Worth family in memory of William Penn Worth and Caroline Hallowell, houses the Health Service's outpatient treatment facilities, offices of the Counseling and Psychological Services (CAPS) staff, and rooms for students who require non-hospital level infirmary care.

6.3.2 Student Health Services

The WHC team includes nurses, nurse practitioners, a student wellness coordinator, a nutritionist, internists, and an adolescent medicine physician. The physicians are contracted through Crozer-Chester Medical Center (CCMC). The WHC staff members are willing to coordinate care with personal health care providers, when given permission by the student. In addition, if a student is admitted to

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the CCMC, WHC staff members and physicians are willing to coordinate care with the hospital providers.

Students may make appointments with health care providers at scheduled times during the week. When school is in session, a registered nurse will interview and evaluate the health needs of the sick student. Through this easy access to care students are given important health information, scheduled to see a health care provider or treated and released based on the level of illness or injury.

WHC maintains a small dispensary of commonly used prescription medications. Students who need prescription medications may purchase them through their insurance or through WHC at a reduced rate. WHC has arranged delivery services from a local pharmacy for students who are unable to access them otherwise. Similarly, laboratory services are provided at low cost or billed through the student's insurance.

We respect a student's right to confidentiality, do not share personal information about a student but encourage a student to speak with parents when his/her care becomes more complicated.

In supporting the College's mission, the WHC is highly committed to providing comprehensive and clinically exceptional care to students. We invite student and parent feedback as part of our review and assessment processes.

For more detailed information and forms, especially those for new students, visit www.swarthmore.edu/health.

6.3.3 Counseling and Psychological Services (CAPS)

Services for students include counseling and psychotherapy, after-hours emergency-on-call availability, consultation regarding the use of psychiatric drugs in conjunction with ongoing psychotherapy, psychological testing, and educational talks and workshops. Counseling and Psychological Services (CAPS) participates in training resident assistants and student academic mentors as well as other student support groups and provides consultation to staff, faculty, and parents.

CAPS comprises a diverse group of psychological, social work, and psychiatric professionals. The director and staff collectively provide regular appointment times Monday through Friday. Students may be referred to outside mental health practitioners at their request or when long-term or highly specialized services are needed. CAPS main office is located in the Worth Health Center, North Wing.

Treatment at CAPS is conducted within a policy of strict confidentiality. Where there may be a significant question of imminent threat to someone's life or safety, CAPS reserves the right to break confidentiality in order to ensure safety.

Requests for service may be made in person or by phone (x8059) between 8:30 a.m. and 4:30 p.m., Monday through Friday. In the event of an after-hours emergency, contact the Health Center (x8058) or Public Safety (x8333).

For more detailed information about CAPS, visit the website at www.swarthmore.edu/caps.xml.

6.3.4 Health Insurance

Students may consult the medical facilities of the College when ill or injured in athletic activities or otherwise, free of charge. The College cannot assume financial responsibility for medical, surgical, or psychological expenses incurred when seeking or referred for care elsewhere. Students and their families are responsible for medical expenses incurred while students are enrolled at the College including medication costs vaccine costs and lab fees.

Students who have no insurance or inadequate insurance coverage must enroll in the College health plan offered to all students. If your insurance status changes, notify student health services immediately. Enrollment to the College health plan must be done within 31 days of the loss of other coverage. Students receiving financial aid may have a portion of the premium cost defrayed. The College provides supplemental health insurance for students who are actively participating in intercollegiate and club sports. For further information, please consult the Medical Administrator/Insurance Coordinator (health@swarthmore.edu). All athletes with questions related to sports injuries should contact Marie Mancini (mmancini1@swarthmore.edu).

6.4 Campus Safety

The Public Safety Department office is located in the Benjamin West House. The department provides round-the-clock uniformed patrol of the campus buildings and grounds by professionally trained patrol officers who can assist students in a variety of ways from emergency response to general advice on crime prevention. Students are encouraged to call the department at 610-328-8281 any time they feel Public Safety can be of assistance. All emergencies should be reported by contacting the department's emergency telephone line 610-328-8333. Any crime or suspected crime should be reported immediately to the Public Safety Department.

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Swarthmore College's Annual Crime and Fire Safety Report is written to comply with the (Pa.) College and University Security Information Act: 24 P.S., Sec. 2502-3©, the federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, and the Campus Fire Safety Right to Know Act. This annual report includes statistics for the previous 3 years concerning reported crimes that occurred on campus, in certain off-campus buildings owned or controlled by Swarthmore College, and on public property within or immediately adjacent to and accessible from the campus. The report also includes institutional policies concerning campus security, such as policies concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters. The College's Fire Safety Report contains a variety of fire safety related information in addition to campus fire statistics for the most recent three calendar years. To obtain a full copy of this document, or to discuss any questions or concerns, contact the director of public safety.

6.5 Cocurricular Opportunities

6.5.1 Student Government

The *Student Council* is the chief body of student government and exists to serve and represent the students of Swarthmore College. Its 11 members are elected semiannually. The powers and responsibilities of the Student Council are (1) the administration of the Student Activities Account; (2) the appointment of students to those committees within the College community upon which student representatives are to serve; (3) the oversight of those students of those committees; (4) the administration of student organizations; (5) the operation of just elections; (6) the execution of referendums; (7) the representation of the student body to the faculty, staff, and administration, and to outside groups, as deemed appropriate; and (8) the formulation of rules needed to exercise these powers and to fulfill these responsibilities. The Student Council provides a forum for student opinion and is willing to hear and, when judged appropriate, act upon the ideas, grievances, or proposals of any Swarthmore student.

The *Student Budget Committee* allocates and administers the Student Activity Fund.

The *Social Affairs Committee* allocates funds to all campus events, maintains a balanced social calendar, and is responsible for organizing formals and various other activities that are designed to appeal to a variety of interests and are open to all students free of charge.

Service on College Committees is determined by the Appointments Committee of Student Council which selects qualified student representatives.

6.5.2 The Arts

Creative arts activities take place in conjunction with the departments of art, English, music and dance, and theater. There are also many student groups that organize creative activities. Professional performers and artists are brought to campus regularly, both to perform/exhibit and to offer master classes. Campus facilities include practice and performance spaces available for student use.

6.5.3 Athletics/Physical Activities

Swarthmore's athletic program is varied, offering every student the opportunity to participate in a wide range of sports, including intercollegiate, club, and intramural teams.

6.5.4 Publications and Media

The Phoenix, the weekly student newspaper; the *Halcyon*, the College yearbook; *The Daily Gazette*, a Web based news service; and WSRN, the campus radio station, are completely student-run organizations. Lodge 6 is a media incubator for journalism. The campus New Media Center supports student initiatives in video and web formats. Several other student publications include literary magazines and newsletters. For more information, contact the student publications coordinator.

6.5.5 Service and Activism

Service and activism activities are an integral part of the lives of many students, faculty, and staff members. The Lang Center for Civic and Social Responsibility (see 6.6.5) coordinates and supports many of these endeavors, though there are also many independent projects in operation on the campus and in the local community.

6.5.6 Student Organizations

Students are encouraged to get involved in extracurricular activities at Swarthmore. More than 100 clubs and organizations span a broad range of interests such as community service; athletics; political action; and religious, cultural, and social activities. If there isn't a club or organization that meets a student's interest, he or she may form one with the guidance of Student Council.

6.6 Student Centers

6.6.1 Black Cultural Center

The Black Cultural Center (BCC), located in the Caroline Hadley Robinson House, provides a library, classroom, computer room, TV lounge, kitchen, all-purpose room, a living room/gallery, two study rooms, and administrative offices. The BCC offers programming, activities, and resources designed to stimulate and sustain the cultural, intellectual and social growth of Swarthmore's black

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students, their organizations and community. Further, the BCC functions as a catalyst for change and support to the College's effort to achieve pluralism. The BCC's programs are open to all members of the College community. The BCC is guided by Assistant Dean Karlene Burrell-McRae, with the assistance of a committee of black students, faculty, and administrators.

6.6.2 Fraternities

There are two fraternities at Swarthmore: Delta Upsilon, affiliated with a national organization, and Phi Omicron Psi, a local association. Although they receive no College or student activity funds, the fraternities supplement social life. They rent lodges on campus but have no residential or eating facilities. In recent years, about 6 percent of male students have decided to affiliate with one of the fraternities. Tom Elverson '75 serves as an adviser to the fraternities.

6.6.3 Intercultural Center

The Intercultural Center (IC) is a multipurpose center located in Tarble in Clothier, devoted to developing greater awareness of Asian American, Latino/Hispanic, gay/lesbian/bisexual, and Native American contributions to Swarthmore College as well as the broader society. The IC provides a supportive environment where students are welcome to discuss and understand the educational, political, and social concerns that affect them. The IC fosters the education of its members and the wider community about cultural, ethnic, class, gender, and sexual orientation differences. Through co-sponsoring programs and building alliances with the administration, other campus groups and departments, the IC increases diversity and respect for differences at all levels of campus life. The IC contains a resource center, small meeting rooms, and a large gathering room. The Resource Center will include Asian American, Hispanic/Latino/a, Native American and queer books, journals, films, videos, scholarships, academic resources, and alumni outreach information such as the alumni database, alumni mentor program, and alumni speaker series.

6.6.4 Interfaith Center

Religious advisers are located in the Interfaith Center in Bond Hall and currently consist of Jewish, Catholic, and Protestant professionals. The advisers and the Interfaith Center provide members of the Swarthmore community opportunities and resources, in an atmosphere free from the dynamics of persuasion, in which they can explore a variety of spiritual, ethical, and moral meanings; pursue religious and cultural identities; and engage in interfaith education and dialogue. The center comprises

offices, a large common worship room, and a private meditation room.

Student groups of many faiths also exist for the purpose of studying religious texts, participating in community service projects, and exploring common concerns of religious faith, spirituality, and culture.

Various services are available on campus, and area religious communities welcome Swarthmore students.

6.6.5 Eugene M. Lang Center for Civic and Social Responsibility

The Lang Center, located at 3–5 Whittier Place, is a hub for activities that support Swarthmore's mission to "help students realize their fullest intellectual and personal potential combined with a deep sense of ethical and social concern." The center supports the College's commitment to social responsibility by providing administrative, financial, logistical, and programming support for a wide range of opportunities to help make connections between the College and communities beyond, both local and global. Its five-person staff works with individual students, student groups, faculty, staff, and community partners. The Lang Center includes a resource room with extensive information about opportunities for service, advocacy, activism, social entrepreneurship, policy, and research, and coordinates the following programs:

Student-led service and activist groups—Many student-led groups use Lang Center facilities and also receive guidance from Lang Center staff. These groups are active in the areas of education, and educational reform; employment; public health; environmental justice; peace and conflict resolution; racial justice; and economic development.

The Swarthmore Foundation—A small philanthropic body formed by Swarthmore College in 1987 with endowments from alumni, foundations, and others, the Swarthmore Foundation supports students, graduating seniors, staff, and faculty involvement in community service and social action. Applications for grants are accepted three times during the academic year.

Summer Social Action Awards (S2A2)—These internships enable students to participate in summer community service and social action experiences on a full-time basis for up to 10 weeks by providing living expenses and summer earnings. Lang Center staff provides guidance to support students to find S2A2 sites that are congruent with their interests.

Lang Opportunity Scholarships—These are awarded to up to six students during first semester of their sophomore year. The scholarship includes a guaranteed summer internship and the opportunity to apply for a

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substantial grant that supports implementation of a major project. Lang Center staff work closely with Lang Opportunity scholars as they develop and carry out their projects.

Project Pericles Fund—Eugene M. Lang '38 and the Board of Managers of Swarthmore College created the Project Pericles Fund in 2005 to support groups of Swarthmore students who propose and implement social and civic action projects that are substantial in scope and length.

Community-Based Learning—The Lang Center offers grants to faculty members who wish to add or revise courses in ways that connect content with communities outside the College. The grants may be used for summer stipends or to cover the cost of a course replacement to permit a course reduction for the faculty member.

The Eugene M. Lang Visiting Professorship for Issues of Social Change—The professorship was endowed in 1981 by Eugene M. Lang '38 to bring to the College an outstanding social scientist, political leader, or other suitably qualified person who has achieved professional or occupational prominence for sustained engagement with issues, causes, and programs directly concerned with social justice, civil liberties, human rights, or democracy.

6.6.6 Tarble Social Center

The Tarble Social Center in Clothier Memorial Hall was provided through the generosity of Newton E. Tarble of the Class of 1913 and his widow, Louise A. Tarble. The facility includes a snack bar, the College Bookstore, Paces (a student-run café and party space), an all-campus space, meeting rooms, a game room, the Swarthmore College Computer Society media lounge and the offices of the Student Budget Committee, the Social Affairs Committee (SAC), Debate Society, and Rattech.

6.6.7 Women's Resource Center

The Women's Resource Center (WRC) is located in a lodge on the west side of campus; it is open to all women on campus. It is organized and run by a student board of directors to bring together women of the community with multiple interests and concerns. The resources of the center include a library, kitchen, various meeting spaces, computer, and phone. The WRC also sponsors events throughout the year that are open to any member of the College community.

6.7 Student Advising

6.7.1 Class Deans

The Office of the Dean for Academic Affairs oversees the advising system. The deans are available to all students for advice on any

academic or personal matter. A dean is assigned to each class in order to specialize in advising matters that are particular to that year. Students, however, may approach any dean for advising, support, or to learn about College resources.

6.7.2 Academic Advising

Each first-year student is assigned to a faculty member or administrator who serves as the student's academic adviser. Once students are accepted by an academic department for their major, normally at the end of the sophomore year, the advising responsibility shifts to the chair, or chair's designate, of that department. Requests for a change of adviser in the first two years will be freely granted subject only to equity in the number of advisees assigned to individual advisers.

6.7.3 Academic Support

Academic support can be accessed through the Office of the Associate Dean for Academic Affairs, through the Office of Student Disability Services, through academic departments (peer mentors, clinics, and review sessions), through the Writing Center (Writing Associates), and in dormitories (Student Academic Mentors). Tutors can be arranged through departments or through the Office of the Associate Dean for Academic Affairs. No fees are required for any of these services.

Student Academic Mentors (SAMs) are upper class students specially selected and trained to work with students on the development of skills necessary for academic success including time management, organization, study strategies and reading techniques. All residence halls with first-year students are assigned a SAM to serve as a resource for its residents.

Writing Associates (WAs) are students who have been specially trained to assist their peers with all stages of the writing process. WAs are assigned on a regular basis to selected courses, and they are located in the Writing Center in Trotter Hall. All students have access to the Writing Center as needed and can receive help on a drop-in basis.

6.7.4 Health Sciences Office (Premed Advising)

The staff of the Health Sciences Office is available to students and alumni considering a career in medicine, dentistry, veterinary medicine or other health professions. The Health Sciences Adviser counsels students throughout their undergraduate years and beyond, and assists them in the process of application for graduate training.

Swarthmore graduates are represented at 54 medical schools in 19 states in the U.S., including such top schools as Harvard, Yale, Columbia, Penn, Stanford, Johns Hopkins, and many fine state universities. In addition,

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Swarthmore graduates are currently attending The University of Pennsylvania, Tufts, Ohio State, and University of California-Davis veterinary schools and University of Pennsylvania, Temple and New York University dental schools. The College's acceptance rate is substantially higher than the national acceptance rate.

While many students planning a medical career decide to major in biology or chemistry, others elect to concentrate in one of the humanities or social sciences, while structuring their overall program to fulfill medical school requirements. The following courses are part of a typical program:

Cellular and Molecular Biology
Organismal and Population Biology
General Chemistry
Organic Chemistry I and II
Biological Chemistry
English
Calculus I and Statistical Methods
General Physics I and II

As veterinary and dental schools have more variable requirements, in addition to those listed above, prevet and pre dental students should meet with Gigi Simeone, the Health Sciences Adviser, to plan their programs.

6.7.5 Prelaw Advising

Swarthmore's academic rigor provides an excellent preparation for students considering a career in law. Swarthmore graduates are represented at law schools across the U.S., including such top schools as Harvard, Columbia, Stanford, and Yale.

Swarthmore students interested in law are encouraged to take a varied and challenging academic program, which will develop their analytical, reading, writing and speaking skills. There is no prelaw major or prescribed prelaw coursework. Students have applied successfully to law school with majors and minors in the humanities, social sciences, and natural sciences.

Gigi Simeone, the Prelaw Adviser, is available to any student or alum considering a career in law. The Prelaw Office counsels students throughout their undergraduate years and beyond, and assists them in the process of application to law school. It offers a series of meetings with law school admissions deans each fall. The office also prepares dean's certifications for students applying to law schools that require it. More information is available at www.swarthmore.edu/prelaw.

6.7.6 Career Services

Career Services offers individualized attention to students who are seeking career direction,

considering majors, exploring internships, job searching or applying for graduate school. Career Counselors and Career Peer Advisers help students develop knowledge of themselves and their life options, advance their career planning and decision-making abilities, and develop skills related to their internship/job search and graduate school admission.

Individual counseling and group workshops encourage students to expand their career options through exploration of their values, skills, interests, abilities, and experiences. A noncredit Career Development course is available for all students, regardless of their academic discipline or year.

Career programming includes alumni career panels and dinners, presentations, workshops, employer information sessions, an etiquette dinner, career fairs and interview days. The office cooperates with Alumni Relations and the Alumni Council to help students connect with a wide network of potential mentors and the offices co-sponsor the annual Lax Conference on Entrepreneurship.

Exploration of career options is encouraged through internships, summer jobs, and alumni-hosted externships during winter break. Students may receive assistance in researching, locating, and applying for internships, employment, and graduate school admission and receive advice in how to gain the most they can from these experiences.

Career Services hosts on-campus recruiting by representatives from for-profit, government and nonprofit organizations. The Career Services website

(www.swarthmore.edu/careerservices.xml) provides access to comprehensive online databases of internship and job listings as well as an events calendar to make information about activities and programs available to students. Recommendation files are compiled for interested students and alumni to be sent to prospective employers and graduate admissions committees.

6.8 Student Judicial System

Swarthmore students assume responsibility for helping to sustain an educational and social community where the rights of all are respected. This includes conforming their behavior to standards of conduct that are designed to protect the health, safety, dignity, and rights of all. The College community also has a responsibility to protect the possessions, property, and integrity of the institution as well as of individuals. The aim of the College's Student Judicial Procedures is to balance all these rights, responsibilities, and community values fairly and efficiently. The judicial system is overseen by the associate dean of

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student life, and all questions should be directed to this office.

The formal judicial system at Swarthmore College has two main components: (1) adjudication by individual deans of minor infractions of College regulations, where a finding of guilt would result in a sanction less severe than suspension; and (2) adjudication by the College Judicial Committee (CJC) of serious infractions of College regulations, including all formal charges of academic dishonesty, assault, harassment, or sexual misconduct. The CJC is composed of faculty, students, and administrators who have undergone training for their role.

Violation of the laws of any jurisdiction, whether local, state, federal, or (when studying abroad) foreign, may, at the discretion of the dean, subject a student to College disciplinary action. A pending appeal of a conviction shall not affect the application of this rule.

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7.1 General Statement

Swarthmore College offers the degree of bachelor of arts and the degree of bachelor of science. The latter is given only to students who major in engineering. Four years of study are normally required for a bachelor's degree (see section 9.1), but variation in this term, particularly as a result of Advanced Placement (AP) credit, is possible (see section 3.5).

The selection of a program will depend on the student's interests and vocational plans. The primary purpose of a liberal arts education, however, is not merely to provide the best foundation for one's future vocation. The purpose of a liberal arts education is to help students fulfill their responsibilities as citizens and grow into cultivated and versatile individuals. A liberal education is concerned with the development of moral, spiritual, and aesthetic values as well as analytical abilities. Furthermore, just as a liberal education is concerned with the cultural inheritance of the past, so, too, it is intended to develop citizens who will guide societies on a sustainable course where future culture will not be compromised in the development of the present. Intellectually, it aims to enhance resourcefulness, serious curiosity, open-mindedness, perspective, logical coherence, and insight.

During the first half of their college program, all students are expected to satisfy most, if not all, of the distribution requirements, to choose their major and minor subjects, and to prepare for advanced work in these subjects by taking certain prerequisites. The normal program consists of four courses or their equivalent each semester, chosen by the student in consultation with his or her faculty adviser.

All students must fulfill the requirements for the major. Before the end of the senior year, students are required to pass a comprehensive examination or its equivalent, given by the major department.

The program for engineering students follows a similar basic plan, with certain variations explained in the section on engineering. Courses outside the technical fields are distributed over all 4 years.

For honors candidates, courses and seminars taken as preparation for external evaluation occupy approximately one-half of the student's work during the last 2 years. In addition to work taken as a part of the Honors Program, the students take other courses that provide opportunities for further exploration. During the senior year, many departments offer a specially designed senior honors study for honors majors and minors to encourage enhancement and integration of the honors preparations. At the

close of the senior year, candidates for honors will be evaluated by visiting examiners.

The course advisers of first-year and sophomore students normally are members of the faculty appointed by the dean. For juniors and seniors, the advisers are the chairs of their major departments or their representatives.

7.2 Program for the First and Second Years

The major goals of the first 2 years of a Swarthmore education are to introduce students to a broad range of intellectual pursuits, to equip them with the analytic and expressive skills required to engage in those pursuits, and to foster a critical stance toward learning and knowing. All students must fulfill the requirements normally intended for the first 2 years of study, although in some science and engineering majors, students may spread some requirements over 4 years. Students entering Swarthmore as transfer students normally fulfill these requirements by a combination of work done before matriculation at Swarthmore and work done here, according to the rules detailed below.

To meet the distribution requirements, a student must earn degree-applicable credit in the following areas:

1. Complete at least 20 credits outside of one major subject before graduation.
2. Complete at least three courses in each of the three divisions of the College (listed later). In each division, the three courses must be at least 1 credit each and may include up to 1 AP credit or credit awarded for work done elsewhere.
3. Complete at least two courses in each division at Swarthmore; these courses must be at least 1 credit each.
4. Complete at least two courses in each division in different departmental subjects; these courses must be at least 1 credit each and may include AP credit or credit awarded for work done elsewhere.
5. Complete at least three Writing courses or Writing seminars, and those three must include work in at least two divisions; students are advised to complete two Writing courses in the first 2 years.
6. Complete a natural sciences and engineering practicum.

Courses that have been excluded from counting toward the degree do not count toward the distribution requirements.

Students are advised to complete at least two courses in each division within the first 2 years.

For purposes of the distribution requirements, the three divisions of the College follow:

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Humanities: art (art history and studio art), classics (literature), English literature, modern languages and literatures, music and dance, philosophy, religion, and theater.

Natural sciences and engineering: biology, chemistry and biochemistry, computer science, engineering, mathematics and statistics, physics and astronomy, and psychology courses that qualify for the natural sciences and engineering practicum.

Social sciences: classics (ancient history), economics, education, history, linguistics, political science, psychology (other than natural sciences and engineering practicum courses), and sociology and anthropology.

A few courses do not satisfy the divisional distribution requirement. These are identified as such in the catalog or the official schedule of courses.

Writing courses: In addition to addressing field-specific substance, writing courses will focus on the development of the students' expository prose to ensure they can discover, reflect upon, organize, and communicate their knowledge effectively in written form.

NSEP science laboratory requirement: Natural sciences and engineering practicums (NSEPs) have at least 18 hours per semester of scheduled meeting time for laboratory, separate from the scheduled lecture hours. How the laboratory hours are scheduled varies with the nature of the course and the types of laboratories involved. Such meetings may entail weekly or biweekly 3-hour sessions in a laboratory, several all-day field trips, or several observation trips.

Cross-listed courses: Courses that are cross-listed between two departments in different divisions may, with the permission of the instructors, departments, and divisions involved, fulfill the divisional distribution requirement in one of the following ways: (1) in only one of the divisions so identified but not in the other; (2) in either division (but not both), depending on the departmental listing of the course on the academic record; (3) in neither of the divisions. In certain cases, the course may fulfill the distribution requirement according to the nature of the work done in the course by the individual student (e.g., a long paper in one of the departmental disciplines). The division of such courses is normally indicated in the catalog description for each course. When counting credits to determine a student's fulfillment of the 20-course-credit rule, cross-listed courses count (only) in the subject in which they are listed on the student record. Changing the subject listing of a cross-listed course on the student record can be arranged, depending on permissions, during or sometimes

after the course; there is a form for the purpose in the Registrar's Office.

First-year seminars: All students are encouraged to take a first-year seminar during the fall or spring of their first year. First-year seminars are offered across the curriculum and are designed to introduce students to a field of study and to engage them in learning skills that will support them throughout their college experience. Each first-year seminar is limited to 12 first-year students. Many (but not all) first-year seminars count as the prerequisite to further work in the department in which they are offered.

Foreign language: It is most desirable that students include in their programs some work in a foreign language, beyond the basic language requirement (see section 9.1).

Mathematics: A student who intends to major in one of the natural sciences, mathematics, or engineering should take an appropriate mathematics course in the first year. Students intending to major in one of the social sciences should be aware of the increasing importance of mathematical background for these subjects.

Physical education: Students are encouraged to enjoy the instructional and recreational opportunities offered by the department throughout their college careers. As a requirement for graduation, all students not excused for medical reasons are required to complete 4 units of physical education by the end of their sophomore year. In addition, all students must pass a survival swimming test or complete a unit of swimming instruction. Most physical education courses are offered for a half a semester and earn 1 unit toward the 4 units required for graduation. A complete list of physical education opportunities including how many units each earns is available from the Physical Education and Athletics Office. More information can be found in the Physical Education and Athletics section. To ensure that all students complete the PE requirement and swim test by the end of the second year, students who fail to do so will not be eligible to participate in the spring housing lottery and will not be eligible to preregister for courses.

Transfer students: Students who enter Swarthmore as transfer students must fulfill Swarthmore's requirements for the first 2 years, including the natural sciences and engineering practicum. Transfer courses can be applied toward these requirements if specifically approved by the registrar. Transfer students who enter Swarthmore with 8 credits of college work are exempted from one of the three required writing courses and have the credits-at-Swarthmore requirement reduced from 2 in each division to 1 in each division. Transfer students who enter Swarthmore with, at most, four semesters remaining to complete their

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degree are exempted from two of the three required writing courses and are exempted from the requirement that in each division 2 credits be taken at Swarthmore. Transfer students can either apply transfer PE units toward the 4-unit physical education requirement or opt for a reduction in the PE requirement based on the student's transfer status, but transfer students cannot both transfer PE units and receive a reduction in the requirement. The optional reduction in PE units depends on the transfer class of the student. Transfer students who enter Swarthmore as sophomores can opt to complete 3 units of physical education and pass a survival swim test (a reduction of 1 PE unit). Transfer students who enter Swarthmore as juniors can opt to complete 2 units of physical education and pass a survival swim test (a reduction of 2 PE units).

Major application—the Sophomore Plan: Early in the sophomore year, each student should identify one or two subjects as possible majors, paying particular attention to departmental requirements and recommendations. In the spring of the sophomore year, each student will, with the guidance of his or her adviser, prepare a reasoned plan of study for the last 2 years. Sophomores who wish to link their interest in social service/social action to their plan of study are also encouraged to take advantage of the advising offered by the staff at the Lang Center for Civic and Social Responsibility. The Sophomore Plan of study will be submitted to the chair of the student's proposed major department as a part of the application for a major. Acceptance will be based on the student's record and an estimate of his or her capacities in the designated major. Students who fail to secure approval of a major may be required to withdraw from the College.

Although faculty advisers assist students in preparing their academic programs, students are individually responsible for planning and adhering to programs and for the completion of graduation requirements. Faculty advisers, department chairs, other faculty members, the deans, and the registrar are available for information and advice.

7.3 Programs for Juniors and Seniors

The major goals of the last two years of a Swarthmore education are to engage students with a chosen field of inquiry and to assist them in assuming an independent role in creating and synthesizing knowledge within it. The breadth of exposure, acquisition of skills, and development of a critical stance during the first two years prepare students to pursue these goals. With the choice of a major and, perhaps, candidacy for honors, the focus shifts from scope to depth. Students become involved for

the second two years with a discrete field of inquiry and demonstrate their command of that field through the completion of courses within the major and courses taken outside the major that expand and deepen the student's perspective on the major.

7.4 Majors and Minors

All students are required to include sufficient work in a single department or program designated as a major. To complete a departmental major, a student must be accepted as a major; must complete eight courses (or more, depending on the department); must pass the department's comprehensive requirement; and must fulfill other specific departmental requirements. Detailed requirements for acceptance to departmental majors and for completion of them are specified in this catalog under the respective departmental listings and are designed to ensure a comprehensive acquaintance with the field. A student must accumulate 20 course credits outside one major, but there is no other limit on the number of courses that a student may take in his or her major.

Completing a second major or one or two minors is optional, as is choosing to do an Honors Program. Students are limited in the number of majors and/or minors they may earn. If they have only one major, they may have as many as two minors. Students who choose an honors major plus honors minor may have an additional course minor outside the Honors Program. If students have two majors, they may not have a minor, except in one circumstance: A student who elects honors, designating an honors major and minor, may have a second major outside of honors if that second major includes the same subject as the honors minor. The completion of two majors must be approved by both departments. Triple majoring is not allowed.

Most departments and programs offer course minors. Those departments or programs that do not offer a course minor are Comparative Literature, Economics, Political Science, Sociology and Anthropology, and Studio Art. (These departments or programs do offer honors minors.) Minors will include at least 5 credits.

Double counting in majors and minors: If a student has two majors and one is interdisciplinary, no more than 2 credits may be double counted with the student's other major. However, the double-counting limit is not applicable to courses that students are required by their departmental major to take in other departments. Of the 5 credits required for a minor, 4 may not be double counted with the student's major or other minor. The double-

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counting prohibition applies to any comparison of two given programs of study (not three taken together, even if the student has three programs). This means that a student who has a major in medieval studies, for example, and minors in both English literature and gender and sexuality studies would need four courses in English literature that are not part of the medieval studies major and four courses in gender and sexuality studies that are not part of the medieval studies major. In addition, each minor must have four courses that are not part of the other minor. Special minors are not permitted.

Exceptions to the double-counting prohibition:

1. The double-counting prohibition is not applicable to courses that students are required by their majors or minors to take in other departments. For example, mathematics courses required for an engineering major are not automatically excluded from counting toward a minor defined by the Mathematics and Statistics Department.
2. For an honors major who is also a double major, the double-counting prohibition does not apply to the relationship between the honors minor and the second major because these will always be or include the same field.

Advising in the major: During the junior and senior years, students are advised by the chair of the major department (or a member of the department designated by the chair) whose approval must be secured for the choice of courses each semester.

7.4.1 Special majors

Individualized and regularized special majors are available. With permission of the departments concerned, it is possible for a student to plan an individualized special major that includes closely related work in one or more departments. In some areas, such as biochemistry, film and media studies, and psychobiology, in which regularized special majors are done frequently, the departments and programs involved provide recommended programs. These regularized special majors are described in the relevant department sections of the catalog or in material available from department chairs. A special major is expected to be integrated in the sense that it specifies a field of learning (not necessarily conventional) or topic or problems for sustained inquiry that crosses departmental boundaries, or it may be treated as a subfield within the normal departmental major. Special majors consist of at least 10 credits and normally of no more than 12 credits. Students with special majors normally complete a minimum of six courses in the primary department or program, omitting some of the breadth requirements of the major field. However, course requirements central to

systematic understanding of the major field may not be waived. Students with special majors must complete the major comprehensive requirement, which may consist of a thesis or other written research projects designed to integrate the work across departmental boundaries, or a comprehensive examination. By extension, special majors may be formulated as joint majors between two departments, normally with at least 5 credits in each department and 11 in both departments. The departments involved collaborate in advising and in the comprehensive examination. The Registrar's Office website has the required application form and more information for special majors. Students are not allowed to pursue more than one individualized special major.

7.5 Honors Program

The Honors Program, initiated in 1922 by President Frank Aydelotte and modified most recently in 1994, is a distinctive part of Swarthmore's educational life.

The Honors Program has as its main ingredients student independence and responsibility in shaping the educational experience; collegial relationships between students and faculty; peer learning; opportunity for reflection on, and integration of, specific preparations; and evaluation by external examiners. Honors work may be carried out in the full range of curricular options, including studio and performing arts, study abroad, and community-based learning.

Students and their professors work in collegial fashion as honors candidates prepare for evaluation by external examiners from other academic institutions and the professional world. Although Swarthmore faculty members grade most of the specific preparations, the awarding of honorifics on a student's diploma is based solely on the evaluation of the external examiners.

Preparations for honors are defined by each department or program and include seminars, theses, independent projects in research as well as in studio and performing arts and specially designated pairs of courses. In addition, many departments offer their own format for senior honors study, designed to enhance and, where appropriate, integrate the preparations in both major and minor.

Each honors candidate's program will include three preparations for external examination in a major and one in a minor or four preparations in a special or interdisciplinary major. By doing honors, students offering three preparations in a major or four preparations in a special or interdisciplinary major normally fulfill the comprehensive graduation requirement for majors in those fields.

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Honors students who wish to complete a second major must pursue that field of study through the Course Program, and it must relate to the student's honors minor field of study.

Normally, the student must complete the requirements for the Honors minor, as well as the course major in the department. If an Honors student pursues an honors special major, any second major must be taken in the Course Program, and must be either a regular major or regularized special major. In such cases, the student's academic program is subject to the overlap constraints for majoring.

Honors Program preparations for both majors and minors will be defined by each department, program, and interdisciplinary major that sponsors a major. In addition, minors may be defined by any department or program.

Honors special majors who design their own programs, not those in College-sponsored programs such as biochemistry, will be required to include four related preparations in the major from at least two departments or academic programs. Honors special major programs do not include a separate minor. Honors special majors must either (1) write a thesis drawing on their cross-disciplinary work—the thesis will be examined by examiners in different fields or (2) have a panel oral examination that presents the opportunity for cross-disciplinary discussion. Honors special majors will follow the Senior Honors Study (SHS) activity and portfolio procedures of the various departments whose offerings they use as preparations in their programs. Individualized honors special major programs require the approval of all departments involved in the program and of the honors coordinator.

All preparations will be graded by Swarthmore instructors with the exception of theses and other original work. Grades for theses and other similar projects will be given by external examiners. Except in the case of theses or other original work, modes of assessment by the external examiners will include written examinations and/or other written assignments completed in the spring of the senior year. In addition, during honors week at the end of the senior year, every honors candidate will meet on campus with external evaluators for an oral examination of each preparation. Specific formats for preparations and for SHS are available in each department office.

Students will normally include their intention to prepare for honors in their "Plan of Study for the Last 2 Years," written in the spring of their sophomore year. They must also submit a formal application for a specific program of honors preparation to the Registrar's Office. The registrar provides a form for this purpose. Departments, programs, and concentrations will make decisions about acceptance of honors

programs at the end of the sophomore year.

Students will be accepted into honors with the proviso that their work continue to be of honors quality. Students may also apply to enter honors during their junior year. Any proposed changes to the Honors Program must be submitted for approval on a form for this purpose available from the registrar. The decision of the departments or interdisciplinary programs will depend on the proposed program of study and the quality of the student's previous work as indicated by grades received and on the student's apparent capacity for assuming the responsibility of honors candidacy. The major department or interdisciplinary program is responsible for the original plan of work and for keeping in touch with the candidate's progress from semester to semester. Normally, honors programs may not be changed after Dec. 1 of a student's senior year, depending on departmental policies. Students may not withdraw from honors after Dec. 1 of the senior year except under extraordinary circumstances and with the permission of the major and minor departments and the Curriculum Committee. Further information about honors policies may be found in the *Honors Handbook*, which is available in the Registrar's Office.

At the end of the senior year, the decision of whether to award the honors degree to the candidates is entirely in the hands of the visiting examiners. Upon their recommendation, successful candidates are awarded the bachelor's degree with honors, with high honors, or with highest honors.

7.6 Exceptions to the 4-Year Program

Although the normal period of uninterrupted work toward the bachelor of arts and bachelor of science degrees is 4 years, graduation in 3 years is freely permitted when a student can take advantage of Advanced Placement credits, perhaps combining them with extra work by special permission. In such cases, students may qualify for advanced standing—they may become juniors in their second year. To qualify for advanced standing, a student must (1) do satisfactory work in the first semester; (2) obtain 14 credits by the end of the first year; (3) intend to complete the degree requirements in 3 years; and (4) signify this intention when she or he applies for a major by completing a Sophomore Plan during the spring of the first year.

When circumstances warrant, a student may lengthen the continuous route to graduation to 5 years by carrying fewer courses than the norm of four, although College policy does not permit programs of fewer than 3 credits for degree candidates in their first eight semesters of enrollment. A course load lower than the norm

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may be appropriate for students who enter Swarthmore lacking some elements of the usual preparation for college, who have disabilities, or who wish to free time for activities relating to their curricular work that are not done for academic credit. Such 5-year programs are possible in music and studio arts for students who are taking instruction off campus or who wish to pursue studio or instrumental work without full credit but with instruction and critical supervision. However, such programs are possible only on application to, and selection by, the department concerned, which will look for exceptional accomplishment or promise. In all cases where it is proposed to reduce academic credit and lengthen the period before graduation, the College looks particularly to personal circumstances and to careful advising and necessarily charges the regular annual tuition (see the provisions for overloads section 4.1). Full-time leaves of absence for a semester or a year or more are freely permitted and in some cases encouraged, subject also to careful planning and academic advising. Information about work and internship opportunities for those taking a leave is available through the Career Services Office.

7.7 Normal Course Load

The academic year at Swarthmore is 32 weeks long, during which time students are expected to complete 6 to 8 semester course credits of work. Normal progress toward the degree of bachelor of arts or bachelor of science is made by eight semesters' work of four course credits or the equivalent each semester, although the object of progress toward the degree is not the mere accumulation of 32 credits. Students may and frequently do vary this by programs of three or five courses, with special permission. College policy does not permit programs of fewer than 3 course credits within the normal eight-semester enrollment. Programs of more than 5 credits or fewer than 4 credits require special permission (see section 4.1 on tuition and section 8.3 on registration).

The definitions of upper-class levels are as follows: Students become sophomores when they have earned 6 to 8 semester course credits toward their degree. Students become juniors when they have earned 14 to 16 credits. Students become seniors when they have earned 22 to 24 credits. Some offices on campus, such as student housing, may have additional requirements in their definitions of the student classes.

7.8 Formats of Instruction

Although classes and seminars are the normal curricular formats at Swarthmore, faculty regulations encourage other modes as well.

These include various forms of individual study, student-run courses, and a limited amount of "practical" or off-campus work.

The principal forms of individual work are attachments to courses, directed reading, and tutorials. The faculty regulation on attachments provides that a student may attach to an existing course, with the permission of the instructor, a project of additional reading, research, and writing. If this attachment is taken concurrently with the course, it is normally done for 0.5 credit. If it is taken in a later semester (preferably the semester immediately following), it may be done for either half or full credit. This kind of work can be done on either a small-group or individual basis. It is not possible in all courses, but it is in most, including some introductory courses. For first-year students and sophomores, it is a way of developing capacities for independent work. For honors candidates, it is an alternative to seminars as a preparation for papers. Students who decide before the middle of the semester to do a 0.5-credit attachment may, with permission, withdraw from a regular course and carry 3.5 credits in that term to be balanced by 4.5 credits in another term. Students may do as many as two attachments each year.

7.8.1 Directed Reading and Independent Study

Directed reading and independent study are similar, but the faculty role in the former is more bibliographical than pedagogical, and, because they require somewhat less faculty time, opportunities for directed reading are more frequent in most departments than are opportunities for independent study. In both cases, substantial written work and/or written examinations are considered appropriate, and it is generally desirable that the work be more specialized or more sharply focused than is usually the case in courses or seminars. The work may range from a course of reading to a specific research project. Such work is available primarily to juniors and seniors in accordance with their curricular interests and as faculty time permits.

7.8.2 Student-Run Courses

The faculty regulation on student-run courses permits a group of students to propose a topic to an instructor for 0.5 or 1 credit and to run their own course with a reading list approved by the instructor and a final examination or equivalent administered by him or her but normally with no further involvement of faculty. In organizing such a course, students obtain provisional approval and agreement to serve as course supervisor from a faculty member by Dec. 1 (for the spring semester) or May 1 (for the fall semester) on the basis of an initial memorandum emphasizing the principal subject

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matter to be studied, the questions to be asked about it, the methods of investigation, and provision of a preliminary bibliography. The course is then registered by its organizers with the provost, who has administrative supervision of such work and who may waive the foregoing deadlines to recognize problems in the organization of such courses. The course supervisor consults his or her department and, in the case of an interdepartmental course, any other department concerned, whose representatives together with the provost will decide whether to approve the course. The supervisor also reviews the course outline and bibliography and qualifications and general eligibility of students proposing to participate in the course. After a student-run course has been found acceptable by the appropriate department (or departments) and the provost, the course supervisor's final approval is due 10 days before the term begins, following which a revised reading list and class list are given to the librarian, and the course title and class list are filed with the registrar. At the end of the course, the supervisor evaluates and grades the students' work in the usual way or arranges for an outside examiner to do so.

Student-run courses may vary in format and content. In particular, they may be provisionally proposed for 0.5 credit to run in the first half of the semester, and at midterm, may be either concluded or, if the participants and course supervisor find the work profitable, continued for the balance of the term for full credit. Alternatively, student-run courses may be started after the beginning of the semester (up to midsemester) for 0.5 credit and then be continued, on the same basis, into the following term. Or they may be taken for 0.5 credit over a full term. The role of the course supervisor may go beyond planning and evaluation and extend to occasional or regular participation. The only essentials, and the purpose of the procedures, are sufficient planning and organization of the course to facilitate focus and penetration. The course planning and organization, both analytical and bibliographical, are also regarded as important ends in themselves, to be emphasized in the review of proposals before approval. Up to 4 of the 32 credits required for graduation may be taken in student-run courses. Many student-run courses are offered only on the credit/no-credit basis.

Finally, as to applied or practical work, the College may, under faculty regulations, grant up to 1 course credit for practical work, which may be done off campus when it can be shown to lend itself to intellectual analysis and is likely to contribute to a student's progress in regular coursework. The work is subject to four conditions: (1) agreement of an instructor to supervise the project; (2) sponsorship by the

instructor's department and, in the case of an interdisciplinary project, any other department concerned, whose representatives together with the provost will decide whether to grant permission for the applied or practical work before that work is undertaken; (3) a basis for the project in some prior coursework; and (4) normally, the examination of pertinent literature and production of a written report as parts of the project. This option is intended to apply to work in which direct experience of the off-campus world or responsible applications of academic learning or imaginative aspects of the practice of an art are the primary elements.

Because such work is likely to bear a loose relation to organized instruction and the regular curriculum, the College limits academic credit for it while recognizing its special importance for some students' programs.

7.9 Interdisciplinary Work

The requirements of the major typically leave room for significant flexibility in students' programs, both within and outside the major. This may be used to pursue a variety of interests and to emphasize intellectual diversity. It may also be used for the practical integration of individual programs around interests or principles supplementing the major. The College offers interdepartmental majors in Asian studies, medieval studies, and comparative literature, and formal interdisciplinary minors in black studies, cognitive science, environmental studies, film and media studies, gender and sexuality studies, German studies, interpretation theory, Islamic studies, Latin American studies, peace and conflict studies, and public policy. The specific requirements for these programs are outlined in the relevant sections of the catalog.

It should be recognized that some departments are themselves interdisciplinary in nature and that a considerable number of courses are cross-listed between departments. Also, some courses each year are taught jointly by members of two or more departments, and departments commonly recommend or require supporting work for their majors in other departments. Many other opportunities exist informally (e.g., in African studies, in American studies, in religion and sociology and anthropology, and in chemical physics). Students are encouraged to seek the advice of faculty members on such possibilities with respect to their particular interests.

7.9.1 Guidelines on Scheduling Conflicts Between Academics and Athletics

The following guidelines (adopted by the faculty in May 2002) are affirmed to recognize both the primacy of the academic mission at Swarthmore and the importance of the

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intercollegiate Athletics Program for our students. The guidelines are meant to offer direction with an appropriate degree of flexibility. Where conflicts occur, students, the faculty, and coaches are encouraged to work out mutually acceptable solutions. Faculty members and coaches are also encouraged to communicate with one another about such conflicts. *Note that the guidelines make a firm distinction between athletics practices and competitive contests.*

1. Regular class attendance is expected of all students. Students who are participating in intercollegiate athletics should not miss a class, seminar, or lab for a practice.
2. Students who have a conflict between an athletics contest and a required academic activity, such as a class meeting or a lecture, should discuss it and try to reach an understanding with their coach and their professor as soon as possible, preferably during the first week of the semester and certainly in advance of the conflict. When a mutually agreeable understanding is not reached, students should be mindful of the primacy of academics at Swarthmore. Students should understand that acceptable arrangements may not be feasible for all classes, particularly seminars and laboratories.
3. Students should take their schedule of athletics contests into account as they plan their class schedules and may want to discuss this with their academic advisers. Students should also provide coaches with a copy of their academic schedules and promptly inform them of any changes.
4. Coaches should make every effort to schedule practices and contests to avoid conflict with classes and should collect their students' academic schedules in an effort to coordinate team activities and minimize conflict. Coaches should instruct students not to miss class for practice and should encourage students to work out possible conflicts between classes and contests as early as possible.
5. Faculty members should provide as complete a description of scheduling requirements as possible to their classes early each semester, preferably before registration or during the first week of classes. Both faculty members and coaches should work with students to resolve contest-related conflicts.
6. Both coaches and faculty should avoid last-minute scheduling changes, and faculty should normally avoid scheduling extraordinary class meetings. Where such meetings seem desirable, students should be consulted and, as the *Handbook for Instructional Staff* stipulates, the arrangement cleared with the department chair and registrar. Where possible, extraordinary sessions should be voluntary or offered with a

choice of sections to attend. When a schedule is changed after students have arranged their commitments, it is important for the faculty member or coach to be flexible.

7. Classes will normally end each day by 4 p.m. and at 5 p.m. on Fridays. Seminars will often extend beyond 4 p.m. Afternoon laboratories are usually scheduled until 4:15 p.m. or 4:30 p.m., and students who encounter difficulties completing a lab may need to stay later than the scheduled time. In all cases, students are expected to keep to their academic commitments and then attend practices as soon as possible.

8. Faculty members should recognize that students usually set aside the time from 4:15 to 7 p.m. for extracurricular activities and dinner. Late afternoon has also traditionally been used for certain courses in the performing arts. Some use of this time for other academic purposes (such as department colloquia, lectures, etc.) is appropriate, but departments are encouraged to exercise restraint in such use, particularly with respect to activities they judge important for the full academic participation of students.

7.10 Health Sciences Advisory Program

The function of the Health Sciences Advisory Program is twofold: to advise students interested in a career in the health professions and to prepare letters of recommendation for professional schools to which students apply. The letters are based on faculty evaluations requested by the student, the student's academic record, and nonacademic activities.

Students intending to enter a career in the health professions, especially those applying to medical, dental, or veterinary schools, should plan their academic programs carefully to meet the professional schools' requirements as well as the general College requirements. The following courses fulfill the basic requirements of most medical schools: BIOL 001, 002; CHEM 010, 022, 032, 038; PHYS 003, 004; MATH 015 and Stat 011; and English, two semester courses. Dental and veterinary schools have more variable requirements, in addition to the biology, chemistry, and physics listed earlier. Students interested in these fields should meet with the health sciences adviser to plan their programs. Specific requirements for each medical, dental, and veterinary school, along with much other useful information, are given in the following publications, which are available in the Health Sciences Office: *Medical School Admission Requirements*, *Official Guide to Dental Schools*, and *Veterinary Medical School Admission Requirements*.

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The work of the junior and senior years may be completed in any major department of the student's choice. All required courses should be taken on a graded basis after the first semester of the first year.

The health sciences adviser meets periodically with students interested in health careers and is available to assist students in planning their programs in cooperation with students' own academic advisers. The Health Sciences Office publishes *Guide to Premedical Studies at Swarthmore College* and *Frequently Asked Pre veterinary Questions* to help new students plan their academic program and understand what schools look for in applicants. *The Guide for Applying to Medical School for Swarthmore Undergraduates and Alumni/ae* contains detailed information about the application process.

Further information on opportunities, requirements, and procedures can be obtained from the health sciences adviser and from the Health Sciences Office's pages on the Swarthmore College website at www.swarthmore.edu/premed.

7.11 Creative Arts

Work in the creative arts is available both in the curricula of certain departments and on an extracurricular basis. Interested students should consult the departmental statements in art, English literature (creative writing), music and dance, and theater.

7.12 Cooperation with Neighboring Institutions

With the approval of their faculty advisers and the registrar, students may take a course offered by Bryn Mawr or Haverford College or the University of Pennsylvania without the payment of extra tuition. Students are expected to know and abide by the academic regulations of the host institution. (This arrangement does not apply to the summer sessions of the University of Pennsylvania and Bryn Mawr College.) Final grades from such courses are recorded on the Swarthmore transcript, but these grades are not included in calculating the Swarthmore grade average required for graduation.

7.13 Student Exchange Programs

To provide variety and a broadened outlook for interested students, the College has student exchange arrangements with Harvey Mudd College, Middlebury College, Mills College, Pomona College, and Tufts University. With each institution, there are a limited and matched number of exchanges. Students settle

financially with the home institution, thus retaining during the exchange any financial aid for which they are eligible.

Application for domestic exchange should be made to the registrar. The application deadline is Oct. 15 for exchange in the following spring semester; the deadline is March 15 for exchange in the following fall semester. Selection is made from among applicants who will be sophomores or juniors at the time of the exchange. Exchange arrangements do not permit transfer of participants to the institution with which the exchange occurs.

Credit for domestic exchange is not automatic. Students must follow the procedures for receiving credit for work done elsewhere, including obtaining preliminary approval of courses and after-the-fact validation of credit by the relevant Swarthmore department chairs.

7.14 Study Abroad

The College emphasizes the importance of study abroad and encourages all students to explore possibilities for doing so as integral parts of their degree programs. The Off-Campus Study Office is the on-campus clearinghouse for information on study abroad, and normally is the starting place for exploration and planning. The Off-Campus Study Office will help all interested students at every stage of the process: planning, study abroad, and return. Proper planning begins with attendance at a general information meeting, and then a study abroad advising appointment, as early as possible in one's college career.

Participants in the Semester/Year Abroad program remain registered at Swarthmore and are subject to the rules and regulations of the College while abroad. Students may study abroad up to two semesters, beginning spring of the sophomore year, and during the junior year. fall semester seniors may participate in study abroad with the permission of their major department as long as they meet all other eligibility requirements.

To be accepted for credit toward the Swarthmore degree, courses taken abroad must meet Swarthmore academic standards, and be preapproved through the Off-Campus Study Office's procedures. Credit for study abroad is awarded according to College regulations for accrediting work at other institutions, and the process must be completed within the semester immediately following participation in a semester or year abroad as part of the Swarthmore College Semester/Year Abroad program.

Students are expected to earn the normal load of four credits per semester, or eight credits per academic year. Students are eligible to earn up to a maximum of five credits per semester, or

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up to a maximum of ten credits per academic year.

To participate in the Swarthmore College Semester/Year Abroad program students must be in good standing concerning both their academic program and conduct. The Off-Campus Study Office and the Dean's Office meet to review student standing and to determine eligibility. Students must also meet the eligibility requirements of the programs to which they apply.

Eligible students must have completed on average four credits per semester and have no incompletes. Students must also have a zero balance on their student accounts.

Participants in the College's Semester/Year Abroad Program must comply with its payment plan. Students continue to pay Swarthmore's comprehensive fee for tuition, room, and board. The College then pays for the tuition fees, room and board costs, and the round-trip travel of participating students (with Philadelphia as the gateway city). Normally, financial aid is automatically applied to study abroad.

Swarthmore College approved study abroad programs are listed below. Please consult the Off-Campus Study website at www.swarthmore.edu/ocs for more information.

For the following programs, see detailed information under departmental listings.

- The Swarthmore Program at the University of Ghana (Legon, Ghana). (see music and dance)
- The Swarthmore Program in Environmental Science and Engineering in Krakow, Poland. (see environmental studies)
- The Swarthmore Program in Environmental Studies in Brno, Czech Republic which includes an internship at an environmental NGO. (see environmental studies)
- Macalester, Pomona, and Swarthmore Environmental Studies Program at the University of Cape Town, South Africa. (see environmental studies)
- The Swarthmore in Buenos Aires, Argentina Program. (see Latin American studies)
- The Northern Ireland Semester based in Derry/Londonderry. (see peace and conflict studies)
- The Cloud Forest School Program in Costa Rica. (see educational studies)

The Off-Campus Studies office maintains direct enrollment agreements with many universities throughout the world.

The College has a special relationship or is a member of a consortium with the following programs:

- AIKOM, University of Tokyo
- Danish Institute for Study Abroad

- Hamilton College Academic Year in Madrid
- HECUA – Higher Education Consortium for Urban Affairs (Ecuador and Scandinavia and Eastern Europe)
- ISLE – Intercollegiate Sri Lanka Educational Program
- Siena School for Liberal Arts
- The Swedish Program

In addition to these programs, Swarthmore students attend a number of excellent approved study abroad programs throughout the world provided by other institutions. The Off-Campus Study Office, along with the academic departments and programs of the College, will advise students on these.

7.15 Student Right to Know

Swarthmore College's graduation rate is 94.6 percent. This is the percentage graduating within 6 years, based on the most recent cohorts, calculated according to "Student Right to Know" guidelines.

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8.1 Attendance at Classes

Regular attendance is expected. Faculty members will report to the dean the name of any student whose repeated absence is in their opinion impairing the student's work. The number of absences allowed in a given course is not specified, a fact that places a heavy responsibility on all students to make sure that their work is not suffering as a result of absences. First-year students should exercise particular care in this respect.

When illness necessitates absence from classes, the student should report at once to the Health Center.

A student may obtain credit for a course without attending class meetings by reading the material prescribed by a syllabus and taking a final examination, under the following conditions:

1. The student must signify intent to do so at the time of registration, having obtained the instructor's approval in advance.
2. If, after such registration, the student wishes to resume normal class attendance, the instructor's approval must be obtained.
3. The student may be required to perform such work, in addition to the final examination, as the instructor deems necessary for adequate evaluation of his or her performance.
4. The registrar will record the final grade exactly as if the student had attended classes normally.

8.2 Grades

During the year, instructors periodically report on the students' coursework to the Dean's and Registrar's offices. Informal reports during the semester take the form of comments on unsatisfactory work. At the end of each semester, formal grades are given in each course either under the credit/no credit (CR/NC) system, or under the letter system, by which A means excellent work; B, good work; C, satisfactory work; D, passing but below the average required for graduation; and NC (no credit), uncompleted or unsatisfactory work. Letter grades may be qualified by pluses and minuses. W signifies that the student has been permitted to withdraw from the course. X designates a condition that means a student has done unsatisfactory work in the first half of a yearlong course but by creditable work during the second half may earn a passing grade for the full course and thereby remove the condition. R is used to designate an auditor or to indicate cases in which the work of a foreign student cannot be evaluated because of deficiencies in English.

8.2.1 In Progress

IP (in progress) is the grade used when normally everyone in a class continues working on a project into the next semester. IP is given at the end of the first semester. Final grades are normally due at the end of the succeeding semester.

8.2.2 Incompletes

Inc. means that a student's work is incomplete with respect to specific assignments or examinations. The faculty has voted that a student's final grade in a course should incorporate a zero for any part of the course not completed by the date of the final examination or the end of the examination period. However, if circumstances beyond the student's control (e.g., illness, family emergency) preclude the completion of the work by this date, a grade of Inc. may be assigned with the permission of the faculty instructor and the registrar. Note that "having too much work to do" is not, in fairness to other students, considered a circumstance beyond the student's control. A form for the purpose of requesting an incomplete is available from the Registrar's Office and must be filled out by the student and signed by the faculty instructor and the registrar and returned to the registrar no later than the last day of final examinations. In such cases, incomplete work must normally be made up and graded, and the final grade recorded within 5 weeks after the start of the following term. Except by special permission of the registrar and the faculty instructor, all grades of Inc. still outstanding after that date will be replaced on the student's permanent record by NC (no credit). Waiver of this provision by special permission shall in no case extend beyond 1 year from the time the Inc. grade was incurred.

8.2.3 Credit/No Credit

The only grades recorded on students' official grade records for courses taken during the first semester of the first year are CR and NC. In the balance of their work at Swarthmore, students may exercise the option to take up to four more courses for credit/no credit by informing the Registrar's Office within the first 9 weeks of the term in which the course is taken, using the form provided for this purpose. Repeated courses normally may not be taken credit/no credit (see section 9.2.4). Courses only offered as credit/no credit do not count in the four options. For first-year students and sophomores, CR will be recorded for work that would earn a grade of straight D or higher. For juniors and seniors, that is, students in their fifth semester or later, the minimum equivalent letter grade for CR will be straight C.

Instructors are asked to provide the student and the faculty adviser with an evaluation of the student's CR/NC work. The evaluation for first-

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semester first-year students includes a letter-grade equivalent. For other students, the evaluation may be either a letter-grade equivalent or a comment. Such evaluations are not a part of the student's official grade record. If available, letter-grade equivalents for first-semester first-year students may be provided to other institutions only if requested by the student and absolutely required by the other institution. Students should save their copies of these evaluations for their records.

8.2.4 Repeated Courses

Some courses can be repeated for credit; these are indicated in departmental course descriptions. For other courses, the following rules apply: (1) Permission to repeat a course must be obtained from the Swarthmore instructor teaching the repeated class. (2) These repeated courses may not be taken CR/NC. (3) To take a course at another school that will repeat a course previously taken at Swarthmore, the student must obtain permission from the chair of the Swarthmore department in which the original course was taken, both as a part of the preapproval process to repeat it elsewhere and, in writing, as part of the credit validation after the course is taken elsewhere.

For repeated courses in which the student withdraws with the grade notation W, the grade and credit for the previous attempt will stand. For other repeated courses, the registration and grade for the previous attempt will be preserved on the permanent record but marked as excluded, and any credit for the previous attempt will be permanently lost. The final grade and any credit earned in the repeated course are the grade and credit that will be applied to the student's Swarthmore degree.

8.2.5 Grade Reports

Grades are available to students on a secure website. Grade reports are not routinely sent to parents or guardians, but such information may be released when students request it. The only exception to this is that parents or guardians of students are normally informed of grades when students have critical changes in status, such as probation or requirement to withdraw.

8.2.6 Grade Average

An average of C (2.0) is required in the courses counted for graduation. An average of C is interpreted for this purpose as being a numerical average of at least 2.0 (A+, A = 4.0, A- = 3.67, B+ = 3.33, B = 3.0, B- = 2.67, C+ = 2.33, C = 2.0, C- = 1.67, D+ = 1.33, D = 1.0, and D- = 0.67). Grades of CR/NC and grades on the record for courses not taken at Swarthmore College are not included in computing this average.

8.3 Registration

All students are required to register and enroll at the times specified in official announcements and to file programs approved by their faculty advisers. Fines are imposed for late or incomplete registration or enrollment.

A regular student is expected to take the prescribed number of courses in each semester to progress toward the degree in the normal eight-semester enrollment. If more than 5 or fewer than 4 credits seem desirable, the faculty adviser should be consulted and a petition filed with the registrar (programs of fewer than 3 credits are not allowed in the normal eight-semester enrollment). Students are expected to select classes that do not pose scheduling conflicts.

Applications to add or drop a course from registration must be delivered to the Registrar's Office within the first 2 weeks of the semester. Applications to withdraw from a course and receive the permanent grade notation W must be received no later than the end of the 9th week of classes or the 5th week of the course if it meets for only half the semester. After that time, late withdrawals are recorded on the student's record with the notation NC unless the student withdraws from the College.

Students are not required to register for audits. Successfully completed audits are recorded (with the notation R) at the end of the semester (except in cases where a registered student has withdrawn after the first 2 weeks of the semester, in which cases the appropriate withdrawal notation stands).

A deposit of \$100 is required of all returning students before their enrollment in both the spring and fall semesters. This deposit is applied to charges for the semester and is not refundable.

8.4 Examinations

Any student who is absent from an examination that is announced in advance must understand that the exam may be rescheduled only by special arrangement with the course instructor. Examinations are not normally rescheduled to accommodate travel plans. Examinations are restricted to students who are registered for the course or otherwise have the explicit permission of the faculty member to take the exam.

8.4.1 Final Examinations

The final examination schedule specified in official announcements directs the place and time of all finals unless the instructor has made other special arrangements. However, College policy holds that students with three final examinations within 24 hours are allowed to reschedule one of these examinations in

8 Faculty Regulations

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consultation with the instructor, as long as the consultation occurs in a timely manner.

By College policy, a student who is not in the Honors Program but who is taking an honors written examination as a course final and has an examination conflict should take the course final examination and postpone the honors written examination until the student's next free examination period. Conversely, a student in the Honors Program who has a conflict with a course final examination should take the honors examination and postpone the course examination in consultation with the professor. In no case may a student take an honors examination before the honors written examination period for that examination.

8.5 Student Leaves of Absence, Withdrawal, and Readmission

8.5.1 Leaves of Absence

Student leaves of absence are freely permitted provided the request for leave is received by the date of enrollment and the student is in good standing. Students planning a leave of absence should consult with a dean and complete the necessary form before the deadline published each semester (usually Dec. 1 and April 1). The form asks students to specify the date of expected return. Students need only notify the dean of their return if their return date changes from that originally indicated on the completed form.

8.5.2 Withdrawal

Withdrawal from the College may occur for academic, disciplinary, health, or personal reasons and may be voluntary or required by the College.

For health-related withdrawals, in no case will a student's mental or physical condition itself be a basis for a required withdrawal. However, when health problems of a physical or psychological nature result in behavior that substantially interferes with a student's academic performance or the educational endeavors of other students or poses a significant threat to the student's safety or safety of others, the College may require the student to withdraw. The Evaluation Committee—comprising two deans—makes the decision to require withdrawal for health-related reasons. The Evaluation Committee will review the problematic behavior and may consult with the director of Worth Health Center, the director of Counseling and Psychological Services, or any other appropriate college official when making its decision. Decisions of the Evaluation Committee may be appealed to the dean of students.

Students withdrawing from the College before the end of the semester normally receive the grade notation "W" (withdrawal) on their permanent record for all in-progress courses.

8.5.3 Readmission

A student who has withdrawn from the College for any reason, voluntarily or involuntarily, may apply for readmission by writing to Dean of Students. Normally, the College will not accept applications for readmission until a full semester, in addition to the semester in which the student has withdrawn, has passed.

A student applying to the College for readmission after withdrawal is required to provide appropriate documentation of increased ability to function academically and in a residential environment and/or of a decreased hazard to health and safety of self and/or others. In the case of withdrawal for medical reasons, this documentation must include an evaluation from the student's personal health care provider. In addition, the student will generally be required to show evidence of successful social, occupational, and/or academic functioning during the time away from the College. This evidence must include the completion of any outstanding incompletes on record.

After such evidence has been provided, the materials will be forwarded to the Evaluation Committee. In the case of health-related withdrawals, the materials will be reviewed by the director of Worth Health Center and/or the director of Counseling and Psychological Services, and the student will be required to be evaluated in person by the appropriate health care professional at the College. At the discretion of the Evaluation Committee, such evaluations may be required for other types of withdrawals as appropriate. These evaluations will provide adjunctive information to the committee's decision-making process. The Evaluation Committee will normally meet with the student and will make a determination regarding the student's readiness to resume study at Swarthmore.

8.5.4 Short-Term Health-Related Absences

Students who are hospitalized during the semester are subject to the readmission procedures described above before they may return to campus to resume their studies. In these situations, the Evaluation Committee may also counsel and advise the student about options for how best to approach the remaining academic work in the semester. In all cases, a student returning to campus from the hospital must report to the Worth Health Center and get clearance from the appropriate health care professional *before* returning to the dormitory to ensure the student's readiness to resume

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college life and so that follow-up care can be discussed.

8.6 Summer School Work and Other Work Done Elsewhere

Students who wish to receive Swarthmore College credit for work at another school must obtain preliminary approval and after-the-fact validation by the chair of the Swarthmore department or program concerned. Preliminary approval depends on adequate information about the content and instruction of the work to be undertaken and ensures the likelihood of the work's applicability toward the Swarthmore degree as well as clarifies the amount of Swarthmore credit likely. Preliminary approval is tentative. Final validation of the work for credit depends on evaluation of the materials of the course, including syllabus, transcript, written work, examinations, indication of class hours, and so forth. Work in other programs, especially summer school programs, may sometimes be given less credit than work at Swarthmore, but this will depend on the nature of the program and the work involved.

Validation may include an examination, written or oral, administered at Swarthmore. All decisions are made on a case-by-case basis. Credit for AP and similar work is discussed in section 3.5. To receive Swarthmore credit for study abroad during the academic year, students must participate in the College's Semester/Year Abroad Program and comply with its payment plan (study abroad is discussed in section 7.14).

An official transcript from the other school must be received by the Registrar's Office before validated work can be recorded for credit. By College policy, in order for work done elsewhere to be granted Swarthmore College credit, the grade for that work must be the equivalent of a straight C or better, but a better than C grade does not in itself qualify for Swarthmore credit.

Students who wish to receive natural sciences and engineering practicum (NSEP) credit for courses taken elsewhere must obtain preliminary approval for the course from the department involved as well as final validation as with other credit. The department can approve NSEP credit if the course is comparable with a Swarthmore NSEP course. Generally, courses taken elsewhere that are not comparable with a Swarthmore NSEP will not receive NSEP credit; however, in exceptional cases, if NSEP criteria are satisfied elsewhere, the department chair may recommend NSEP credit award to the Division of Natural Sciences and Engineering for its final decision.

Requests for credit must be made within the semester following the term in which the work was done. Credit is lost if a student takes a

course at Swarthmore that essentially repeats the work covered by the credit.

8.7 Physical Education

In the first and second years, all nonveteran students not excused for medical reasons are required to complete 4 units of physical education by the end of their sophomore year. All students must pass a survival swimming test or take up to one unit of swimming instruction. For complete requirements, see Physical Education and Athletics.

8.8 Exclusion from College

The College reserves the right to exclude, at any time, students whose academic standing it regards as unsatisfactory and without assigning any further reason therefore, and neither the College nor any of its officers shall be under any liability whatsoever for such exclusion.

9 Degree Requirements

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9.1 Bachelor of Arts and Bachelor of Science

The degree of bachelor of arts or bachelor of science is conferred upon students who have met the following requirements for graduation. The candidate must have:

1. Completed 32 course credits or their equivalent.
2. An average grade of at least C in the Swarthmore courses counted for graduation (see section 8.2.6). A student with more than 32 credits may use the Swarthmore credits within the highest 32 for the purposes of achieving the C average.
3. Complied with the distribution requirements and have completed at least 20 credits outside one major subject (see section 7.2).
4. Fulfilled the foreign language requirement, having either: (a) successfully studied 3 years or the "block" equivalent of a single foreign language during grades 9 through 12 (work done before grade 9 cannot be counted, regardless of the course level); (b) achieved a score of 600 or better on a standard achievement test of a foreign language; (c) passed either the final term of a college-level, yearlong, introductory foreign language course or a semester-long intermediate foreign language course; or (d) learned English as a foreign language while remaining demonstrably proficient in another.
5. Met the requirements in the major and supporting fields during the last 2 years. (For requirements pertaining to majors and minors, see section 7.4).
6. Passed satisfactorily the comprehensive examinations in his or her major field or met the standards set by visiting examiners in the Honors Program.
7. Completed four semesters of study at Swarthmore College. Two of these must constitute the senior year (i.e., the last two full-time semesters of degree work), with the exception that seniors during the first semester of their senior year, with the approval of the chair(s) of their major department(s), may participate in the Swarthmore Semester/Year Abroad Program.
8. Completed the physical education requirement set forth in the Physical Education and Athletics Department statements.
9. Paid all outstanding bills and returned all equipment and library books.

Only students who have completed the work for the bachelor's degree with some distinction, either at Swarthmore or at another institution of satisfactory standing, shall be admitted as candidates for the master's degree at Swarthmore.

The candidate's record and a detailed program setting forth the aim of the work to be pursued shall be submitted, with a recommendation from the department or departments concerned, to the Curriculum Committee. If accepted by the committee, the candidate's name shall be reported to the faculty at or before the first faculty meeting of the year in which the candidate is to begin work.

The requirements for the master's degree shall include the equivalent of a full year's work of graduate character. This work may be done in courses, seminars, reading courses, regular conferences with members of the faculty, or research. The work may be done in one department or in two related departments.

A candidate for the master's degree shall be required to pass an examination conducted by the department or departments in which the work was done. The candidate shall be examined by outside examiners, provided that where this procedure is not practicable, exceptions may be made by the Curriculum Committee. The department or departments concerned, on the basis of the reports of the outside examiners, together with the reports of the student's resident instructors, shall make recommendations to the faculty for the award of the degree.

At the option of the department or departments concerned, a thesis may be required as part of the work for the degree.

A candidate for the master's degree will be expected to show before admission to candidacy a competence in those languages deemed by his or her department or departments most essential for the field of research. Detailed language requirements will be indicated in the announcements of departments that admit candidates for the degree.

The tuition fee for graduate students who are candidates for the master's degree is the same as for undergraduates (see section 4.1).

9.2 Master of Arts and Master of Science

The degree of master of arts or master of science may be conferred subject to the following requirements:

10 The Corporation

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May 5, 2012 to May 4, 2013

Giles K. Kemp '72, *Chair*
Scarsdale NY

Neil R. Grabois '57, *Vice Chair*
New York NY

Nancy N. Nicely, *Secretary*
Swarthmore College
Swarthmore PA

Maurice G. Eldridge '61, *Assistant Secretary*
Swarthmore College
Swarthmore PA

Suzanne P. Welsh, *Treasurer*
Swarthmore College
Swarthmore PA

Lori Ann Johnson, *Assistant Treasurer*
Swarthmore College
Swarthmore PA

11 Board of Managers

Term Expires May 2013

Jorge L. Aguilar '05
Columbia University
New York NY

Richard Barasch '75
Universal American Financial Corp.
New York NY

Dulany Ogden Bennett '66
South Woodstock VT

James C. Hormel III '55
Equidex, Inc.
San Francisco CA

Frederick W. Kyle '54
Philadelphia PA

Susan Levine '78
San Francisco CA

Jorge Munoz '84
The World Bank
Washington DC

John A. Riggs '64
The Aspen Institute
Washington DC

Carl R. Russo '79
Consigliare Management Co.
San Jose CA

Robin Shapiro '78
Encore Financial Services Group
New York NY

David W. Singleton '68
Wilmington DE

Thomas E. Spock '78
Scalar Media Partners, LLC
New York NY

Danielle Toaltoan '07
New York NY

Joseph Turner '73
Golden CO

Term Expires May 2014

Rhonda Cohen '76
Philadelphia PA

Janet S. Dickerson H'92
Princeton NJ

Jenny Hourihan '80
Brooklyn NY

Lewis H. Lazarus '78
Morris James, LLP
Wilmington DE

Sibella Clark Pedder '64
Surrey England

Gustavo R. Schwed '84
New York NY

Term Expires May 2015

Sohail Bengali '79
San Mateo CA

Nathaniel Erskine '10
Worcester MA

Thomas Hartnett '94
New York NY

Jane Lang '67
Sprenger Lang Foundation
Washington DC

Lucinda Lewis '70
Potomac MD

James Lovelace '79
Los Angeles CA

Bennett Lorber '64
Temple University Hospital
Philadelphia PA

Christopher Niemczewski '74
Washington DC

Term Expires May 2016

Delvin Dinkins '93
West Chester PA

J. David Gelber '63
Garrison NY

Neil R. Grabois '57
New York NY

Marilyn Holifield '69
Coral Gables FL

Ann Reichelderfer '72
Rocky Hill NJ

Elizabeth H. Scheuer '75
Bronx NY

Sujatha Srinivasan '01
New York NY

Ruth Shoemaker Wood '01
Princeton NJ

11 Board of Managers

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Emeriti

Julie Lange Hall '55
Winnetka IL
Samuel L. Hayes III '57
Harvard Business School
Boston MA
Jerome Kohlberg Jr. '46
Kohlberg & Co.
Mt. Kisco NY
Elizabeth J. McCormack
Rockefeller Family & Associates
New York NY
Marge Pearlman Scheuer '48
New York NY
J. Lawrence Shane '56
Newtown Square PA

Ex officio

Rebecca Chopp
Swarthmore College
Swarthmore PA
Susan S. Morrison '81
Austin TX

Chairman of the Board Emeritus

Eugene M. Lang '38
Eugene M. Lang Foundation
New York NY

11.1 Committees of the Board

The chair of the Board is an *ex officio* member of every committee.

Executive

Giles K. Kemp, Chair
Neil R. Graboys, Vice Chair
Richard Barasch
Dulany Ogden Bennett
Rebecca Chopp
Rhonda Cohen
David Gelber
Eugene M. Lang *
Bennett Lorber
Barbara W. Mather
Nancy Nicely
Chris Niemczewski
Robin M. Shapiro
David W. Singleton
Thomas E. Spock

Academic Affairs

Bennett Lorber, Chair
Joseph Turner, Vice Chair
Jorge Aguilar
Dulany Ogden Bennett
David Gelber
Neil R. Graboys
Julie Hall
Sibella Clark Pedder
Elizabeth H. Scheuer
Marge Scheuer *

Admissions and Financial Aid

Thomas E. Spock, Chair
Barbara W. Mather, Vice Chair
Rhonda Cohen
Janet Dickerson
David Gelber
Samuel Hayes III *
Harold Kalkstein **
Lucinda M. Lewis
Tracey Patillo
Sibella Clark Pedder
Elizabeth H. Scheuer

Audit and Risk Management

Richard Barasch, Chair
Jenny Hourihan, Vice Chair
Sohail Bengali
Lewis H. Lazarus
Barbara W. Mather, *ex officio*
David Singleton

Compensation

Giles K. Kemp, Chair, *ex officio*
Neil R. Graboys, Vice Chair
Janet Dickerson
Susan Levine
Barbara W. Mather
Chris Niemczewski

Development and Communications

Robin Shapiro, Chair
Lewis H. Lazarus, Vice Chair
Jorge Aguilar
Nathaniel Erskine
Thomas Hartnett
Eugene M. Lang *
Susan Levine
Lucinda M. Lewis
James Lovelace
Susan S. Morrison, *ex officio*
John A. Riggs
Gustavo Schwed
Sujatha Srinivasan

Finance

Barbara W. Mather, Chair
Richard Barasch, Vice Chair
Sohail Bengali
Rhonda Cohen
Harold Kalkstein **
Susan Levine
Lucinda M. Lewis
John A. Riggs
Gustavo Schwed

11 Board of Managers

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David Singleton
Thomas E. Spock
Joseph Turner

Elizabeth H. Scheuer
Danielle Toaltoan
Joseph Turner

Investment

Chris Niemczewski, Chair
Salem Shuchman, Vice Chair **
Ephraim Greenwall **
Mark M. Harmeling **
Eugene M. Lang *
Barbara W. Mather, *ex officio*
Corey Mulloy **
Gustavo Schwed

*Emeriti manager
**Non-board member

Nominating and Governance

Rhonda Cohen, Chair
John A. Riggs, Vice Chair
Sohail Bengali
Neil R. Graboys, *ex officio*
Giles K. Kemp, *ex officio*
Bennett Lorber
Barbara W. Mather
Robin M. Shapiro

Property

David W. Singleton, Chair
Frederick W. Kyle, Vice Chair
Richard Barasch
Thomas Hartnett
Samuel L. Hayes III *
Giles K. Kemp
Susan Levine
Sibella Clark Pedder
John A. Riggs
Robin M. Shapiro
Thomas E. Spock
Danielle Toaltoan

Social Responsibility

David Gelber, Chair
Susan Levine, Vice Chair
Dulany Ogden Bennett
Nathaniel Erskine
James C. Hormel
Frederick W. Kyle
Eugene M. Lang *
Jane Lang
Susan S. Morrison, *ex officio*
Jorge Munoz
Tracey Patillo
David W. Singleton

Student Affairs

Dulany Ogden Bennett, Chair
Janet Dickerson, Vice Chair
Jorge Aguilar
Nathaniel Erskine
Neil R. Graboys
James C. Hormel
Jenny Hourihan
Eugene M. Lang *
Lewis H. Lazarus
Jorge Munoz
Tracey Patillo

12 Alumni Association Officers and Alumni Council

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The Alumni Relations Office is the primary communication link between the College and its alumni, enabling them to maintain an ongoing relationship with each other. Some of the office's programs and activities include Alumni Weekend, national and international alumni gatherings, and alumni travel. The Alumni Office facilitates online engagement with alumni and manages alumni volunteers. They also hire students for general office work and to help at on-campus alumni events.

The Alumni Office works closely with the Career Services Office to facilitate networking between students and alumni and among alumni, to take advantage of the invaluable experience represented among the alumni. The Alumni Office also helps officers of the senior class and alumni groups plan special events.

The Alumni Office gives staff support to the Alumni Association, which was founded in 1882, and to the Alumni Council, the governing body of the Alumni Association. The Alumni Office also gives staff support to regional alumni and parent groups, called Connections, in Austin/San Antonio; Atlanta; Boston; Chicago; Denver; Houston; London; Los Angeles; Metro DC/Baltimore; Metro N.Y.C.; Miami; Minneapolis; New Haven; Paris; Philadelphia; San Francisco; Seattle; Singapore and Tucson.

There are 19,680 alumni: 9,933 men, 9,745 women, with 2,590 married to each other, giving substance to the College's traditional appellation, "Quaker matchbox." The College defines an alumnus/a as anyone who has completed one semester.

Alumni Association Officers

Susan Signe Morrison '81, president
Robert Steelman '92, vice president
David Ko '92, vice president
Nina Paynter '97, vice president
Jim Moskowitz '88, secretary

Zone A

Delaware, Pennsylvania

Sarah Mooers '88³
Ambler, Pa.
Jim Moskowitz '88
Swarthmore, Pa.
Leonard I. Nakamura '69¹
Philadelphia, Pa.
Lourdes M. Rosado '85¹
Havertown, Pa.
Kevin Wilson '92³
Gettysburg, Pa.

Zone B

New Jersey, New York

Donna L. Gresh '83¹
Cortlandt Manor, N.Y.

Brian Hwang '05²
New York, N.Y.
Jaky Joseph '06²
New York, N.Y.
Thomas L. Newman II '87¹
Pompton Plains, N.J.
Nicole O'Dell Odum '88³
Bellport, N.Y.
John Randolph II '97³
Brooklyn, N.Y.
Rosita Sarnoff '64²
New York, N.Y.
Suzanne Winter '10²
New York, N.Y.

Zone C

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

Joseph M. Armah '98¹
Norwalk, Conn.
Diana Aronzon '05¹
Cambridge, Mass.
David Jenemann '93^{2,4}
Burlington, Vt.
Demetrios Karis '74³
Still River, Mass.
Anne McGuire '80³
Cambridge, Mass.
Nina P. Paynter '97²
Jamaica Plain, Mass.
Elizabeth Thoenen '83²
Belmont, Mass.

Zone D

District of Columbia, Maryland, and Virginia

Emily Aubrey '89²
Baltimore, Md.
William Bradford '66²
Washington, DC
Barbara Stubbs Cochran '67¹
Washington, D.C.
Juan Gelpi '84³
Virginia Beach, Va.
Rakhee Goyal '93³
Olney, Md.
Martha Marrazza '09²
Bethesda, Md.
Donald McMinn '86²
Washington, DC

Zone E

Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Texas, West Virginia, and Wisconsin

Rebecca Committo '10²
Chicago, Ill.
Carolyn Kelley '75¹
Austin, Texas
Benjamin Keys '01¹
Chicago, Ill.

12 Alumni Association Officers and Alumni Council

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Susan Morrison '81²
Austin, Texas
Jules Moskowitz '66¹
Prairie Village, Kan.
Thomas Scholz '81³
Iowa City, Iowa
Cynthia Hunter Spann '75³
Dallas, Texas
Kristin Bergstrom Vessey '61²
Bowling Green, Ohio
Patrick Zweidler-McKay '89^{2,4}
Houston, Texas

Zone F

Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, territories, dependencies, and foreign countries
Janet Erlick '88³
Fort Lauderdale, Fla.
Paige M. Gentry '07¹
Durham, N.C.
Kenneth M. Gibson '76¹
Atlanta, Ga.
Sara Orr Sello '66²
Hamburg, Germany
Mark Shapiro '88³
Coral Gables, Fla.
Horatiu Stefan '01²
Seoul, Republic of Korea

Zone G

Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming
Kennette Banks '06³
Oakland, Calif.
Deborah How '89²
Santa Monica, Calif.
David Ko '92²
San Mateo, Calif.
Walter Luh '99³
Sunnyvale, Calif.
Robert Oye '73²
Los Angeles, Calif.
Cathryn J. Polinsky '99¹
San Mateo, Calif.
Elan Silberblatt-Buser '12¹
Evan J. Wittenberg '91¹
Palo Alto, Calif.

Members-at-Large

Robert Steelman '92²
Ridgewood, N.J.
Rachel Weinberger '80²
Summit, N.J.

Nominating Committee Chair

Sabrina Martinez '92⁴
Houston, Texas

National Extern Program Coordinator

Joshua Green '94²
Keauhou, Hawaii

National Connection Chair

David Steinmuller '56²
Gallatin Gateway, Mont.

Connection Representatives

Atlanta
Linda Valleroy '72
Decatur, Ga.
Emily Nolte '07
Atlanta, Ga.
Boston
David Wright '69
Wellesley, Mass.
Gina Salcedo '10
Somerville, Mass.
Chicago
Marilee Roberg '73
Wilmette, Ill.
Denver
Erin Trapp '92
Denver, Colo.
Houston
Peter Zustovich '00
Houston, Texas
London
Abby Honeywell '85
London, England
Los Angeles
Deborah How '98
Santa Monica, CA
Metro DC/Baltimore
Wuryati Morris '04
Washington, DC
Hilary Rice '02
Arlington, VA
Nina Schichor '02
Washington, DC
Metro N.Y.C
Win Ling Chia '06
Brooklyn, N.Y.
Lily Ng '08
Brooklyn, NY
Miami
Ana Corrales '97
Miami, Fla.
New Haven
Caitlin Koerber '08
New Haven, CT
Molly Weston '10
New Haven, CT
Paris
Anais Loizillon '95
Paris, France
Philadelphia
James J. Moskowitz '88
Swarthmore, Pa.

12 Alumni Association Officers and Alumni Council

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Pittsburgh

Barbara Sieck Taylor '75

Pittsburgh, Pa.

San Francisco

Autumn Quinn '04

Mountain View, Calif.

Singapore

Angelina Seah '07

Singapore

Triangle Region

Julia Knerr '81

Chapel Hill, N.C.

George Telford '84

Durham, N.C.

Tucson

Laura Markowitz '85

Tucson, Ariz.

Twin Cities

Rebeka Ndosi '97

Minneapolis, MN

¹ Term ends 2015.

² Term ends 2013.

³ Term ends 2014.

⁴ Nominating Committee

13 Faculty and Other Instructional Staff

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13.1 Emeriti

Robert C. Bannister, B.A., Ph.D., Yale University; B.A., M.A., University of Oxford, Scheuer Professor Emeritus of History.

Robert A. Barr Jr., B.A., Swarthmore College; M.A., University of Pennsylvania, Dean Emeritus of Admissions.

Thomas H. Blackburn, B.A., Amherst College; B.A., M.A., University of Oxford; Ph.D., Stanford University, Centennial Professor Emeritus of English Literature.

Thompson Bradley, B.A., Yale University; M.A., Columbia University, Professor Emeritus of Russian.

Lee Devin, B.A., San Jose State College; M.A., Ph.D., Indiana University, Professor Emeritus of Theater.

H. Searl Dunn, B.S.E., M.S.E., Princeton University; Ph.D., Brown University, Henry C. and J. Archer Turner Professor Emeritus of Engineering.

Robert S. DuPlessis, B.A., Williams College; M.A., Ph.D., Columbia University, Isaac H. Clothier Professor Emeritus of History and International Relations.

Marion J. Faber, B.A., M.A., University of California, Berkeley; Ph.D., Harvard University, Scheuer Family Professor Emerita of Humanities and Professor Emerita of German.

James D. Freeman, B.A., M.A., Ph.D., Harvard University, Daniel Underhill Professor Emeritus of Music.

J. William Frost, B.A., DePauw University; M.A., Ph.D., University of Wisconsin, Howard M. and Charles F. Jenkins Professor Emeritus of Quaker History and Research.

John E. Gaustad, A.B., Harvard University; Ph.D., Princeton University, Edward Hicks Magill Professor Emeritus of Astronomy.

Kenneth J. Gergen, B.A., Yale University; Ph.D., Duke University, Gil and Frank Mustin Professor Emeritus of Psychology.

Charles E. Gilbert, B.A., Haverford College; Ph.D., Northwestern University, Professor Emeritus of Political Science and Provost Emeritus.

James H. Hammons, B.A., Amherst College; M.A., Ph.D., Johns Hopkins University, Professor Emeritus of Chemistry.

John J. Hassett, B.A., St. Francis College; M.A., University of Iowa; Ph.D., University of Wisconsin, Susan W. Lippincott Professor Emeritus of Modern and Classical Languages.

Mark A. Heald, B.A., Oberlin College; M.S., Ph.D., Yale University, Morris L. Clothier Professor Emeritus of Physics.

Raymond F. Hopkins, B.A., Ohio Wesleyan University; M.A., Ohio State University; M.A., Ph.D., Yale University, Richter Professor Emeritus of Political Science.

Gudmund R. Iversen, M.A., University of Michigan; Ph.D., Harvard University, Professor Emeritus of Statistics.

Charles L. James, B.S., State University of New York at New Paltz; M.S., State University of New York at Albany, Sara Lawrence Lightfoot Professor Emeritus of English Literature.

Jennie Keith, B.A., Pomona College; M.A., Ph.D., Northwestern University, Centennial Professor Emerita of Anthropology and Provost Emerita.

Charles F. Kelemen, B.A., Valparaiso University; Ph.D., Pennsylvania State University, Edward Hicks Magill Professor Emeritus of Computer Science.

Deborah G. Kemler Nelson, B.A., M.A., Ph.D., Brown University, Centennial Professor Emerita of Psychology.

T. Kaori Kitao, B.A., M.A., University of California, Berkeley; Ph.D., Harvard University, William R. Kenan Jr., Professor Emerita of Art History.

Eugene A. Klotz, B.S., Antioch College; Ph.D., Yale University, Albert and Edna Pownall Buffington Professor Emeritus of Mathematics.

James R. Kurth, B.A., Stanford University; M.A., Ph.D., Harvard University, Claude C. Smith Professor Emeritus of Political Science.

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Matthew Murphy, B.A., Princeton University; M.A., Georgetown University; Instructor of Political Science.

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13 Faculty and Other Instructional Staff

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Lala Zuo, B.A., Peking University, Beijing; M.A., Ph.D., University of Pennsylvania, Assistant Professor of Chinese.

13.3 Divisions, Departments, and Programs

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Art

Michael Cothren, Chair

Asian Studies

William Gardner, Chair

Classics

William Turpin, Chair

English Literature

Nora Johnson, Chair

History

Robert Weinberg, Acting Chair

Mathematics and Statistics

Thomas J. Hunter, Chair

Modern Languages and Literatures

Haili Kong, Chair

Music and Dance

Barbara Milewski, Chair
Sharon Friedler, Director of Dance

Philosophy

Alan Baker, Acting Chair

Psychology

Barry Schwartz, Acting Chair

Religion

Ellen Ross, Chair

Theater

Elizabeth Stevens, Acting Chair

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Sara Hiebert Burch, Chair

Chemistry and Biochemistry

Kathleen Howard, Chair

Computer Science

Richard Wicentowski, Chair

Engineering

Lynne Molter, Chair

Linguistics

K. David Harrison, Chair

Mathematics and Statistics

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Philosophy

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Physics and Astronomy

Michael Brown, Chair

Psychology

Barry Schwartz, Acting Chair

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Ellen Magenheimer, Chair

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K. Ann Renninger, Chair

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Robert Weinberg, Acting Chair

Linguistics

K. David Harrison, Chair

Mathematics and Statistics

Thomas J. Hunter, Chair

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Alan Baker, Acting Chair

Political Science

Cynthia Halpern, Chair

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Barry Schwartz, Acting Chair

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Sociology and Anthropology

Farha Ghannam, Acting Chair

Interdisciplinary Programs

Carol Nackenoff, Chair

Rose Maio, Administrative Coordinator for the Divisions of Humanities, Social Sciences, and Natural Sciences and Engineering

13.3.4 Interdisciplinary Programs

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William Gardner, Chair

Black Studies

Keith Reeves, Coordinator

Cognitive Science

Alan Baker, Coordinator

Comparative Literature

Alexandra Gueydan, Coordinator

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Peter Collings, Coordinator

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Interpretation Theory

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Islamic Studies

Tariq al-Jamil, Coordinator

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Craig Williamson, Coordinator

Peace and Conflict Studies

Lee Smithey, Coordinator

Public Policy

John Caskey, Coordinator

Library

Off-Campus Study

Physical Education and Athletics Advisory Committee

Promotion and Tenure

Research Ethics

13.5 Other Committees With Faculty Representation

Advisory Council to the Dean

Ad Hoc Committee on ADA Planning (as needed)

Ad Hoc Committee on Documented Disabilities

Institutional Animal Care and Use Committee

College Budget Committee

College Judiciary Committee

Crum Woods Stewardship Committee

Cultural Diversity

Equal Opportunity Advisory Committee

Faculty and Staff Benefits

Honorary Degrees

Howard Hughes Medical Institute

Sager

Swarthmore Foundation

13.4 Standing Committees of the Faculty

Academic Requirements

Assessment Planning Committee

Faculty Advisory Council to Dean of Admissions

Council on Educational Policy

Committee on Faculty Procedures

Cooper Foundation Committee

Curriculum Committee

Fellowships and Prizes

Health Sciences Advisory

Lang Center Advisory Board

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14.1 Administrative Structure

President

President
 Vice President for College and Community
 Relations and Executive Assistant to the
 President
 Equal Opportunity Office
 Eugene M. Lang Center for Civic and Social
 Responsibility

Vice President and Dean of Admissions

Admissions

Secretary of the College and Vice President for Communications

Communications Office
 Risk Management and Legal Services

Vice President for Development and Alumni Relations

Advancement Services
 Advancement Operations
 Alumni and Gift Records
 Alumni Relations
 Development
 Annual and Parent Giving
 Capital Giving
 Corporate, Foundation, and
 Government Relations
 Donor Relations
 Events Planning
 Gift Planning
 Research

Vice President for Facilities and Services

Bookstore
 Dining Services
 Facilities Management
 Environmental Services
 Grounds
 Maintenance
 Planning and Construction
 Lang Performing Arts Center
 Occupational and Environmental Safety
 Post Office
 Public Safety
 Scott Arboretum
 Summer Programs

Vice President for Finance and Treasurer

Controller
 Business Office
 Office Services
 Student Accounts
 Institutional Research
 Investment Office
 Risk Management

Vice President for Human Resources

Human Resources
 Payroll

Provost

Associate Provost
 Executive Assistant to the Provost
 Center for Social and Policy Studies
 Information Technology Services
 Libraries
 Cornell Science and Engineering
 Library
 Friends Historical Library
 McCabe Library
 Swarthmore College Peace Collection
 Underhill Music and Dance Library
 Off-Campus Study Office
 Physical Education and Athletics

Dean of Students

Associate Dean for Academic Affairs
 Associate Dean for Multicultural Affairs
 Associate Dean for Student Life
 Academic Support
 Black Cultural Center
 Career Services
 Counseling and Psychological Services
 Disability Services
 Fellowships and Prizes
 Gender Education
 Health Sciences Office
 Health Services
 Intercultural Center
 Registrar's Office
 Residential Life
 Student Activities

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14.2 Admissions Office

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Yvetta Moat, Administrative Coordinator.

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Laura Severin, B.A., Dickinson College, Associate Dean of Admissions.

Joanna Weinland, B.A., Kenyon College; M.S.Ed., University of Pennsylvania, Senior Assistant Dean of Admissions.

Joaquim Hamilton, B.A., Franklin & Marshall College, Assistant Dean of Admissions.

David A. Thompson Jr., B.A., Lehigh University, Assistant Dean of Admissions.

Rachel White, B.A., Guilford College, Assistant Dean of Admissions.

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John Wesley Willison, B.A., Swarthmore College, Admissions Counselor.

Simon Nin Riccardi Zhu, B.A., Swarthmore College, Admissions Counselor.

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Kristie Beucler, B.A., Gettysburg College; M.S., West Chester University, Assistant Director (job share).

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14.5 Center for Social and Policy Studies

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Tarsia Duff, A.A.S., Delaware County Community College, Administrative Assistant.

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Maria McBride, Student Accounts Assistant.

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Jennifer Marks-Gold, B.S., Drexel University; Ed.M., Cabrini College, International Students and Scholars Adviser.

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Connie Baxter, Administrative Coordinator.

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Advancement Operations

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Barbara Mann, B.S., West Chester University, Manager, Advancement Data and Technology.

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Millie Dappollone, A.A.S., Community College of Philadelphia, Administrative Assistant.

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Geoff Semenuk, B.A., University of Delaware, Associate Director.

Wendy Waltman, B.A., Lock Haven University, Assistant Director.

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Mary Carr, A.B.A., Keystone School of Business, Administrative Assistant.

Annual and Parent Giving

Danielle F. Shepherd, B.S., Georgetown University, Director.

Alexandria L. Craig, B.S., B.A., Gettysburg College, Associate Director of Parent Giving.

Carol Stuart, Administrative Assistant.

Kara McDonald, B.S., Ohio University, Assistant Director.

Fritz Ward, B.A., Eckerd College; M.F.A., University of North Carolina at Greensboro, Associate Director.

Deborah J. Mulligan, Administrative Assistant.

Capital Giving

Kay Fairs, B.A., University of Lancaster, England, Director.

Anne Bonner, B.A., University of Wyoming; M.A., University of Washington, Senior Associate Director.

Susan Lathrop, B.A., Wellesley College; M.Ed., Smith College; B.S., University of Delaware, Associate Director.

Alex Unger, B.A. University of Pennsylvania; M.P.A., New York University, Associate Director.

Dierdre W. Konar, B.S. Babson College; M.S. Drexel University, Associate Director.

Sandy Byers, Administrative Assistant.

Corporate, Foundation, and Government Relations

Kenneth Dinitz, B.A., Swarthmore College; M.A., New School for Social Research, Director.

Nadine Kolowrat, B.F.A., New York University Tisch School of the Arts, Senior Associate Director.

Tania Johnson, B.A., M.A., University of Pennsylvania, Associate Director.

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Deborah L. Thompson, B.S., Kutztown University, Administrative Assistant.

Donor Relations

Melissa M. Pizarro, A.B., Lafayette College, Director.

K. Nadine Kavanaugh, A.B., University of Chicago; M.F.A., Columbia University, Associate Director.

Gift Planning

Michael Valoris, B.A., Pennsylvania State University; J.D., Widener University School of Law, Director.

Patti Bender, B.S., University of Minnesota; M.A., St. Mary's University, Associate Director.

Amanda M. Hrinkevich, B.A., Marist College; J.D., Widener University School of Law, Gift Planning Administrator.

Research

Florence Ann Roberts, B.A., Gettysburg College; M.S., University of Pennsylvania, Director.

Barbara Fleming, B.A., Tufts University, Research Associate/Writer.

Sara J.M. Gruner, M.S., Purdue University; B.S., Pennsylvania State University, Research Analyst.

Kay Watson, A.A.S., Pennsylvania State University, Research Specialist.

14.11 Dining Services

Linda McDougall, B.A., Temple University, Director of Dining Services.

Janet A. Kassab, Director of Purchasing and Menu Planning.

Benton Peak, A.S., Bucks County Community College, Executive Chef.

Augustine Ruhri, Cash Operations Manager.

Therese Hopson, Front-of-House Manager.

Lynn Grady, Office Manager.

Barbara Boswell, Catering Manager.

Lisa Scolaro, Culinary Institute of America, Catering Chef.

14.12 Equal Opportunity Office

Sharmaine B. LaMar, B.S., St. Joseph's University; J.D., University of Richmond, Assistant Vice President for Risk Management and Legal Services, Director of Equal Opportunity.

14.13 Facilities and Services

C. Stuart Hain, B.A., Roanoke College, Vice President for Facilities and Services.

Paula Dale, B.A., Wake Forest University; M.A., University of North Carolina at Chapel Hill, Executive Assistant, Facilities and Services.

Mary K. Hasbrouck, B.A., Oberlin College, Technology Coordinator.

Christi A. Pappert, Administrative Coordinator.

Jinny Schiffer, A.B., Smith College, M.S., Temple University, Environmental Health & Safety Officer.

Susan Smythe, B.A., Wesleyan University, A.D.A. Program Manager.

14.14 Facilities Management

Claire Ennis, Facilities Management Coordinator.

Alice Balbierer, Assistant Director of Facilities Management, Director of Special Projects.

Patricia Maloney, B.A., Pennsylvania State University, Facilities Coordinator and Director of Summer Programs.

Environmental Services

Patti Shields, Director.

Don Bankston, Supervisor.

Brian Vazquez, Supervisor.

Alvin Miser, Supervisor.

Grounds

Jeff Jabco, B.S., Pennsylvania State University; M.S., North Carolina State University, Director of Grounds/Coordinator of Horticulture.

Steve Donnelly, Athletic Fields Supervisor.

Paul Eriksen, B.S., University of Delaware, Garden Supervisor.

Chuck Hinkle, B.S., Temple University, Garden Supervisor.

Bill Costello, A.S., Temple University and A.S., Pennsylvania State University, I.P.M. Coordinator/Gardener II.

Dwight Darkow, A.S., Williamsport Area Community College, Gardener.

Maintenance

Ralph P. Thayer, Director of Maintenance.

Bill Maguire, Manager, Maintenance/Trades.

Carolyn Vance, Workbox Coordinator.

Didi Beebe, B.A. Gettysburg College, Information Specialist/Accounting.

John Scilio, Supervisor.

Bob McCaughern, Supervisor.

Bernard Devlin, Supervisor.

Planning and Construction

Janet M. Semler, B.S., Pennsylvania State University; M.S., Drexel University, Director of Planning and Construction.

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Michael Boyd, Senior Project Manager.

Tom Cochrane, Senior Project Manager for Engineering Systems.

Woodford Frazier, A.S., Montgomery County Community College, Facilities Information Manager.

14.15 Finance and Treasurer's Office

Suzanne P. Welsh, B.A., B.S., University of Delaware; M.B.A., University of Pennsylvania, Vice President for Finance and Treasurer.

Lois L. Falzone, Administrative Coordinator.

14.16 Financial Aid Office

Laura Talbot, B.A., Wheaton College, Director of Financial Aid.

Kristin Moore, B.S., St. Francis University; M.A., Indiana University of Pennsylvania, Associate Director of Financial Aid.

Judith A. Strauser, B.S., B.A., Gannon University, Associate Director of Financial Aid.

Laurie Heusner, B.A.; M.A. University of Pennsylvania, Assistant Director of Financial Aid.

Joanne Barracliff, Loan Coordinator.

Catherine Custer, B.S., Lock Haven University; **Gina Fitts**, Administrative Assistants.

14.17 Health Sciences/Prelaw Advisory Program

Gigi Simeone, A.B., Wellesley College; Ed.M., Boston University; Ph.D., University of Pennsylvania, Health Sciences Adviser.

Jennifer Lenway, M.S.W., Portland State University, Administrative Assistant.

14.18 Health Services

Beth Kotarski, M.S.N., C.R.N.P., University of Pennsylvania, Nurse Practitioner, Director.

Suzie H. Long, M.S.N., C.R.N.P., University of Pennsylvania, Nurse Practitioner.

Cheryl Donnelly, R.N., B.S.N., West Chester University, Nurse.

Ethel Kaminski, R.N., B.S.N., Gwynedd Mercy College; M.S.N., University of Pennsylvania, Nurse.

Barbara Krohmer, R.N., A.S., Delaware County Community College, Nurse.

Eileen Stasiunas, R.N., B.S.N., Villanova University, Nurse.

Satya Nelms, B.A., Wesleyan University, Student Wellness Coordinator.

Deborah Westerling, B.S., R.D., L.D.N., West Chester University, Nutritionist.

Mary Jane Palma, Medical Administrator/Insurance Coordinator.

14.19 Human Resources

Pamela Prescod-Caesar, B.S., Lesley College; M.B.A., Curry College, Vice President, Human Resources.

Carolyn Hatt, B.A., University of Delaware; M.S., Widener University, Employment Manager.

Theresa Handley, Benefits Administrator.

Janis Leone, Human Resources Coordinator.

Payroll

Karen Phillips, Payroll Director.

Susan Watts, Payroll Coordinator.

Catherine Wilson, Payroll/Human Resources Assistant.

14.20 Information Technology Services

R. Glenn Stauffer, B.B.A., Temple University, Director, Enterprise Systems and Interim Chief Information Technology Officer.

Kelly A. Fitzpatrick, IT Coordinator.

Academic Technologies

Michael Bednarz, B.A., Pennsylvania State University, Media Services Technician.

Eric Behrens, B.A., Swarthmore College, Associate Chief Information Technology Officer, Academic Technologies.

Justin Crowell, B.A., New College of Florida; M.A. Media Arts, University of Michigan; Media Center Associate.

Michael Kappeler, B.A., Richard Stockton College of New Jersey, Web Content Coordinator.

Leslie Leach, B.S., University of Maine, Web Developer.

David T. Neal Jr., B.A., Temple University, Media Services Technician.

Michael Patterson, B.A., Temple University, Media Services Manager.

Andrew Ruether, B.A., Swarthmore College; M.Eng., Cornell University, Academic Technologist.

Karen "Corrine" Schoeb, B.A., Goddard College, Web Content Management Developer.

Doug Willen, B.A., Princeton University; Ph.D., University of California, Academic Technologist.

Administrative Applications Support

Kimberly Fremont, B.S., Saint Joseph's University; M.A., George Washington University, System Support Analyst.

Robin Jacobsen, B.B.S., Temple University, Systems Analyst.

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Frank Milewski, B.S., St. John's University,
Director, Administrative Information Systems.

Jean Pagnotta, B.S.I.E., University of
Pittsburgh, System Analyst.

Rhoni A. Ryan, B.S., Villanova University,
System Support Analyst.

Edward Siegle, B.A., West Chester University,
Senior Systems Analyst.

Client Services

Kenneth Collins, B.A., Temple University,
Client Services
Coordinator/Telecommunications
Administrator.

Mark CJ Davis Jr., A.S., CLC, B.S., Delaware
Valley College, Software Specialist.

Heather Dumigan, Client Services
Coordinator.

Seth Frisbie-Fulton, B.A., Antioch College,
Client Services Coordinator.

Christopher Klaniecki, B.A., Swarthmore
College, Technical Support Specialist.

Aixa I. Pomales, B.A., Temple University,
Director, Client Services.

Michael Rapp, Hardware Support Technician.
Enterprise Services

Nathan Austin, B.A., Widener University,
Systems Administrator.

Wenping Bo, B.A., Tianjin Foreign Languages
Institute; M.S., Lawrence Technological
University; M.S., Clemson University, System
Analyst.

Michael Clemente, B.S., Rowan University,
Systems Administrator.

Nicholas Hannon, B.S., Worcester Polytechnic
Institute; M.S., Syracuse University,
Information Security Analyst.

Jason Rotunno, B.S., Drexel University, Junior
Systems Administrator.

Donald Tedesco, B.A., Rutgers University,
Data Center Supervisor.

Networking and Telecommunications

Mark J. Dunic, B.A., M.B.A., University of
Rochester, Director, Networking and
Telecommunications.

Robert Velez, B.S., Liberty University,
Network Administrator.

14.21 Institutional Research Office

Robin H. Shores, B.A., M.A., Ph.D.,
University of Delaware, Director of
Institutional Research.

Alexander McClung, B.A., Colgate
University; M.A., SUNY-New Paltz, Research
Analyst.

14.22 Investment Office

Mark C. Amstutz, B.A., College of William
and Mary; M.A., University of Virginia, C.F.A.,
Managing Director Investments.

Lori Ann Johnson, B.A., Rutgers University;
M.B.A., Villanova University, Director of
Investment Operations and Assistant Treasurer.

Nathan Newport, B.A., University of Florida;
M.B.A., Drexel University, Investment Analyst.

Carmen Duffy, Investment Associate.

14.23 Lang Center for Civic and Social Responsibility

Joy Charlton, B.A., University of Virginia;
M.A., Ph.D., Northwestern University,
Executive Director.

Cynthia Jetter, B.A., Swarthmore College,
Director for Community Partnerships and
Planning.

Jennifer Magee, B.A., M.A., Washington
College; Ph.D., George Mason University,
Associate Director for Student Programs.

Debra Kardon-Brown, B.S., Pennsylvania
State University, Assistant Director for Student
Programs.

Delores Robinson, Administrative Assistant.

George Lakey, B.S., Cheyney University;
M.A., University of Pennsylvania, Research
Fellow and Director of Global Nonviolent
Action Database Project.

14.24 Lang Performing Arts Center

James P. Murphy, B.F.A., State University of
New York at Albany, Managing Director.

J. Scott Burgess, Sound Designer,
Audio/Video Assistant, Stage Manager.

Allison Emmerich, B.A., DeSales University,
Production Assistant.

Joshua Schulman, B.A., Washington College,
M.F.A., Boston University, Lighting Designer,
Lighting Assistant.

Thomas Snyder, B.S., Pennsylvania State
University, Manager of Operations.

Jean R. Tierno, B.A., J.D., Widener
University, Administrative Assistant.

14.25 Libraries

14.25.1 College Library

Peggy Ann Seiden, B.A., Colby College; M.A.,
University of Toronto; M.L.I.S., Rutgers
University, College Librarian.

Annette Newman, B.A., Evergreen State
College, Assistant to the College Librarian.

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Digital Initiatives

Kate Carter, B.F.A., New York University; M.L.S., University of Pittsburgh, Digital Initiatives Librarian.

Spencer Lamm, B.A., University of Washington; M.L.I.S., University of Washington, Digital Initiatives Librarian.

Reference and Bibliographic Instruction

Anne Garrison, B.A., Drew University; M.A., University of Washington; M.L.S., University of Washington, Humanities Librarian.

Pam Harris, B.A., Mary Washington College; M.L.S., Drexel University, Outreach, Instruction, and Reference Services Librarian.

Lucy Saxon, B.A., Haverford College; M.L.I.S., San Jose State University, Reference & Instruction Intern.

Technical Services

Barbara J. Weir, B.S., Pennsylvania State University; M.L.S., Drexel University, Associate College Librarian for Technical Services & Digital Initiatives.

Amy McColl, B.A., University of Delaware; M.L.S., Drexel University, Assistant Director for Collections and TriCollege Consortium Licensing Librarian.

Susan Dreher, B.A., Wesleyan University; M.L.I.S., Drexel University, Digital Resources Digitization Coordinator.

Sarah Hartman-Caverly, B.A., Haverford College; M.L.I.S. and M.I.S., Drexel University, Serials and Electronic Resources Specialist.

So-Young Jones, B.A., Euha Women's University, Korea; M.L.S., Simmons College, Technical Services Specialist.

Melinda Kleppinger, B.S., Lebanon Valley College, Government Documents Specialist.

Mary Marissen, B.A., Calvin College; M.M., Catholic University of America, Technical Services Specialist.

Danie Martin, B.A., B.S., Ohio State University; M.L.S., Kent State University, Technical Services Specialist.

Kerry McElrone, B.A., Saint Joseph's University, Interlibrary Loan Specialist.

Louise Petrilla, A.A., Delaware County Community College, Technical Services Specialist.

Sandra M. Vermeychuk, B.A., Swarthmore College; M.S. in Ed., University of Pennsylvania, Interlibrary Loan Specialist.

Access and Lending Services

Alison J. Masterpasqua, B.S., Millersville State College, Access and Lending Services Supervisor.

Linda Hunt, B.A., West Chester University, Access and Lending Services Specialist.

Chris Gebert, B.A., University of Delaware, Access and Lending Services Specialist.

Mary Ann Wood, B.S., Pennsylvania State University; M.Ed., Temple University, Evening Access and Lending Services Supervisor.

Tricollege Library Consortium

Anna Headley, B.A., Swarthmore College, Library Applications Intern.

Chelsea Lobdell, B.S., Muhlenberg College; M.S., University of Pennsylvania, Library Applications Programmer.

Ken Watts, Book Van Driver.

14.25.2 Cornell Science and Engineering Library

Meg E. Spencer, B.A., University of Richmond; M.S., Drexel University, Head of Cornell Library of Science and Engineering and Science Librarian.

Teresa E. Heinrichs, B.A., Waynesburg College, Cornell Access and Lending Services Supervisor.

Margaret J. Brink, B.A., University of Iowa, Serials and Access Specialist.

14.25.3 Underhill Music and Dance Library

Donna Fournier, B.A., Connecticut College; M.L.S., Southern Connecticut State University; M.A., West Chester University, Music and Dance Librarian.

14.25.4 Friends Historical Library

Christopher Densmore, B.A., Oberlin College; M.A., University of Wisconsin, Curator.

Patricia Chapin O'Donnell, B.A., M.A., University of Pennsylvania; M.A., University of Delaware, Archivist.

Barbara E. Addison, B.S., University of Wisconsin–Milwaukee; M.S.L., University of Wisconsin–Madison, Technical Services Coordinator.

Susanna K. Morikawa, B.A., Dickinson College; M.F.A., Ph.D., Syracuse University, Archival Specialist.

Charlotte A. Blandford, Administrative Assistant.

Honorary Curators of the Friends Historical Library

Esther Leeds Cooperman, **Mary R. Dunlap** (emerita), **Philip L. Gilbert**, **Valerie Gladfelter**, **James E. Hazard**, **Howard T. Hallowell III** (emeritus), **Adalyn Purdy Jones**, **Elizabeth H. Moger** (emerita), **Robert C. Turner**, **Nancy V. Webster**, **Signe Wilkinson**, and **Harrison M. Wright**.

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14.25.5 Swarthmore College Peace Collection

Wendy E. Chmielewski, B.A., Goucher College; M.A., Ph.D., State University of New York at Binghamton, George Cooley Curator.

Barbara E. Addison, B.S., University of Wisconsin-Milwaukee; M.S.L., University of Wisconsin-Madison, Librarian.

Mary Beth Sigado, B.M., Temple University, M.S.W., Widener University, Technical Services Specialist.

Anne Yoder, B.A., Eastern Mennonite College; M.L.S., Kent State University, Archivist.

Advisory Council of the Swarthmore College Peace Collection

Harriet Hyman Alonso, **Kevin Clements**, **Hilary Conroy** (emeritus), **John Dear**, **Donald B. Lippincott**, **Hannah** and **Felix Wasserman**.

14.26 List Gallery

Andrea Packard, B.A., Swarthmore College; Certificate, Pennsylvania Academy of the Fine Arts; M.F.A., American University, Director.

14.27 Off-Campus Study Office

Sharon E. Friedler, B.A., Colby College; M.F.A., Southern Methodist University, Faculty Adviser for Off-Campus Study.

Patricia C. Martin, B.A., Williams College; M.A., School for International Training, Director for Off-Campus Study.

Rosa M. Bernard, B.S., Pace University, Assistant Director for Off-Campus Study.

Diana R. Malick, B.S., Neumann College, Off-Campus Study Assistant.

14.28 Post Office

Vincent J. Vagnozzi, B.S., West Chester University, Supervisor.

David Robinson, Assistant Supervisor.

Russ Quann, **Vincent O'Connell**, **Tom McGilligan** and **Tom Dibattista**, Clerks.

14.29 President's Office

Rebecca S. Chopp, B.A., Kansas Wesleyan University; M.Div., St. Paul School of Theology; Ph.D., University of Chicago, President of the College and Professor of Religion.

Maurice G. Eldridge, B.A., Swarthmore College; M.Ed., University of Massachusetts, Vice President for College and Community Relations and Executive Assistant to the President.

Laura K. Warren, B.A., Strayer University, Executive Coordinator.

Jenny Gifford, Administrative Coordinator.

14.30 Provost's Office

Thomas A. Stephenson, B.S., Furman University; Ph.D., University of Chicago, Provost and James H. Hammons Professor of Chemistry and Biochemistry.

Patricia L. Reilly, B.A., University of California; M.A., Bryn Mawr College; Ph.D., University of California, Associate Provost and Associate Professor of Art History.

Marcia C. Brown, B.A., Villanova University; M.Ed., University of Pennsylvania, Executive Assistant to the Provost.

Cathy Pescatore, Administrative Coordinator.

Joanne Kimpel, Administrative Coordinator.

14.31 Public Safety

Michael J. Hill, B.A., University of Pennsylvania; Director of Public Safety.

Herbert Barron, A.A.S., Community College of Philadelphia, B.A., Cheyney State College; Captain.

Brian Harris, **Dominick Martino**, Patrol Sergeants.

Joe Forgacic, Patrol Corporal.

Jim Ellis; **Bob Stephano**; **Kathy Agostinelli**, A.A.S., Delaware County Community College;

Tony Green; and **Rob Warren**, Public Safety Officers.

George Darbes, A.A.S., Delaware Technical and Community College; Communications Supervisor.

Terry McGonigle, **Brandi Jones**, **Maggie McCans**, B.A. University of Scranton, Communications Center.

Terri Narkin, **Mary Lou Lawless**, Administrative Assistants.

14.32 Registrar's Office

Martin O. Warner, B.A., University of North Carolina at Chapel Hill; M.A., Duke University, Registrar.

Lesia Shieber, B.S., Tuskegee University; M.S., Virginia Tech, Associate Registrar.

Stacey Hogge, A.S., Delaware County Community College; B.S., West Chester University, Assistant Registrar.

Janet McSwiggan, Assistant Registrar.

14.33 The Scott Arboretum

Claire Sawyers, B.S., M.S., Purdue University; M.S., University of Delaware, Director.

Julie Jenney, B.A., University of Oregon, Educational Programs Coordinator.

Andrew Bunting, A.A.S., Joliet Junior College; B.S., Southern Illinois University, Curator.

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Jody Downer, A.A.S., Drexel University, Administrative Assistant.

Jeff Jabco, B.S., Pennsylvania State University; M.S., North Carolina State University, Horticultural Coordinator.

Rebecca Robert, B.S., M.S., Pennsylvania State University, Member and Visitor Programs Coordinator.

Jacqui West, Administrative Coordinator.

14.34 Academic Administrative Assistants and Technicians

Art: June V. Cianfrana, A.A.S., Delaware County Community College, Administrative Assistant; Stacy Bomento, B.A., LaSalle University, Slide Curator; Douglas Herren, B.F.A., Wichita State University; M.F.A., Louisiana State University, Studio Technician.

Asian Studies: Anna Everetts, Administrative Assistant.

Biology: Matt Powell, B.S., Central Michigan University, Administrative and Technology Manager; Diane Fritz, Administrative Coordinator; John Kelly, A.A.S., Community College of Philadelphia; B.S., Wharton School, University of Pennsylvania, Senior Technical Specialist; Gwen Kannapel, B.S., Denison University; M.E., Widener University, Laboratory Coordinator; Tami Gura, B.A., Western Maryland College, Animal Facilities Manager.

Black Studies: Anna Everetts, Administrative Assistant.

Chemistry and Biochemistry: Kathryn R. McGinty, B.A., M.A., California State University at Long Beach, Administrative Assistant; David S. Trimble, B.S., Denison University; Ph.D., University of Tennessee, Instrument Coordinator.

Classics: Deborah Sloman, Administrative Assistant.

Computer Science: Bridget M. Rothera, Administrative Assistant; Jeffrey M. Knerr, B.S., College of William and Mary; M.S., Ph.D., University of North Carolina, Lab/System Administrator.

Economics: Nancy Carroll, B.A., Barat College, Administrative Assistant.

Educational Studies: Kae Kalwaic, B.S., Shippensburg University; M.Ed., Temple University, Administrative Assistant.

Engineering: Cassy Burnett, Administrative Coordinator; Edmond Jaoudi, B.S., Fairleigh Dickinson University; M.Arch., Virginia Polytechnic Institute and State University, Electronics, Instrumentation, and Computer Specialist; Anne Ruether, B.S., Swarthmore College, Academic Support Coordinator; Grant Smith, Mechanician.

English Literature: Carolyn Anderson, Administrative Coordinator

Environmental Studies: Cassy Burnett, Administrative Coordinator.

Film and Media Studies: Carolyn Anderson, Administrative Coordinator

Gender and Sexuality Studies: Anna Everetts, Administrative Assistant.

German Studies: Eleonore Baginski, B.S., St. Joseph's University, Administrative Coordinator; Jennifer Piddington, B.A. Long Island University, Administrative Assistant.

History: Jennifer Moore, B.A., University of Pennsylvania; M.S.Ed., University of Pennsylvania, Administrative Assistant.

Interpretation Theory: Anna Everetts, Administrative Assistant.

Islamic Studies: Anita Pace, Administrative Assistant.

Latin American Studies: Anna Everetts, Administrative Assistant.

Linguistics: Aaron J. Dinkin, A.B., Harvard University, Phonetics Lab Coordinator; Dorothy Kunzig, Administrative Assistant.

Mathematics and Statistics: Stephanie J. Specht, Administrative Assistant; Kaitlyn E. O'Neil, B.A., Merrimack College; M.A., University at Buffalo, The State University of New York, Academic Support Coordinator.

Modern Languages and Literatures: Eleonore Baginski, B.S., St. Joseph's University, Administrative Coordinator; Jennifer Piddington, B.A. Long Island University, Administrative Assistant; Michael Jones, B.A., State University of New York at Buffalo, Language Resource Center Director.

Music and Dance: Hans Boman, B.M., Philadelphia College of Performing Arts, Dance Program Accompanist; Bernadette Dunning, Administrative Coordinator; Susan Grossi, Administrative Assistant; Tara Nova Webb, B.A., Swarthmore College; M.A., New York University, Arts Administration Intern and Costume Shop Supervisor.

Peace and Conflict Studies: Anna Everetts, Administrative Assistant.

Philosophy: Donna Mucha, Administrative Assistant.

Physical Education and Athletics: Marian Fahy, A. S., Delaware County Community College, Sharon J. Green, Administrative Assistants; Ray Scott, B.A., Widener University, Larry Yannelli, B.A., Widener University, Equipment/Facilities Managers; Marie Mancini, A.T.C., B.S., C.C.C.S., West Chester University; Jessica Lydon, M.S., A.T.C., West Chester University; Allison Hudak, A.T.C., West Chester University.

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Physics and Astronomy: Carolyn Warfel, A.S., Widener University, Administrative Assistant; Paul Jacobs, B.S., Georgia Institute of Technology, M.S., Ph.D., University of Michigan, Instrumentation/Computer Technician; Steven Palmer, Machine Shop Supervisor; Timothy Gray, B.A., Swarthmore College; Ph.D., Princeton University, Postdoctoral Research Scientist.

Political Science: Gina Ingiosi; Deborah Sloman, Administrative Assistants.

Psychology: Kathryn Timmons, Administrative Coordinator; Julia L. Welbon, B.A., William Smith College, Academic Coordinator.

Public Policy: Catherine Wareham, A.S., Wesley College, Administrative Assistant.

Religion: Anita Pace, Administrative Assistant.

Sociology and Anthropology: Rose Maio, Administrative Coordinator.

Theater: Jean Tierno, B.A., J.D., Widener University, Administrative Assistant; Tara Nova Webb, B.A., Swarthmore College, M.A., New York University, Intern, Music and Dance, and Costume Shop Supervisor.

15 Visiting Examiners

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Art

Marcus Baenziger, *Haverford College*
 Susan Fenton, *Saint Joseph's University*
 Janice Merendino, *Rosemont College*

Art History

Emily Hage, *Saint Joseph's University*
 Elizabeth Lillehoj, *DePaul University*
 Evelyn Lincoln, *Brown University*
 Mary Shepard, *Friends University*

Biology

Kathy Barton, *Stanford University*
 Brenda Bradley, *Yale University*
 Brenda Casper, *University of Pennsylvania*
 Brian Gregory, *University of Pennsylvania*
 Jeanne Harris, *University of Vermont*
 Mark Haussmann, *Bucknell University*
 Vikram Iyengar, *Villanova University*
 Molly Jahn, *University of Wisconsin–Madison*
 Thomas Jongens, *University of Pennsylvania*
 Anne Mertl Millhollen, *University of Oregon*
 Erik Puffenberger, *The Clinic for Special Children*
 Tania Roth, *University of Delaware*
 Theodore Schurr, *University of Pennsylvania*
 Alex Theos, *Georgetown University*
 Joseph Thompson, *Franklin and Marshall College*
 Joanne Willey, *Hofstra University*
 Jonathan Wilson, *Haverford College*

Chemistry and Biochemistry

Frances Blase, *Haverford College*
 Barry Selinsky, *Villanova University*
 Veronika Szalai, *Center for Nanoscale Science and Technology of the National Institute of Standards and Technology*

Classics—Greek

John Marincola, *Florida State University*
 Ralph Rosen, *University of Pennsylvania*

Classics—Latin

Robert Germany, *Haverford College*
 Alison Keith, *University of Toronto*

Comparative Literature

Lazaro Lima, *University of Richmond*
 Russell Scott Valentino, *University of Iowa*

Computer Science

Jeannie Albrecht, *Williams College*
 Deepak Kumar, *Bryn Mawr College*
 Ryan Newton, *Indiana University*

Economics

David Eil, *George Mason University*
 Markus Goldstein, *The World Bank*
 Abigail Hornstein, *Wesleyan University*
 Jaime Marquez, *Federal Reserve Board*
 Walter Nicholson, *Amherst College*
 Dennis Sullivan, *Miami University of Ohio*
 Larry Taylor, *Lehigh University*
 Tao Wang, *Princeton University*

Educational Studies

Megin Charner-Laird, *Salem State University*
 Pat Enciso, *The Ohio State University*
 Avi Kaplan, *Temple University*
 Linn Posey-Maddox, *University of Wisconsin–Madison*

Engineering

Daniel Sheer, *HydroLogics*

English Literature

Anthony Cuda, *University of North Carolina at Greensboro*
 Elaine Freedgood, *New York University*
 Yogita Goyal, *University of California, Los Angeles*
 David Jenemann, *University of Vermont*
 Homay King, *Bryn Mawr College*
 Edward Larkin, *University of Delaware*
 Sue-Im Lee, *Temple University*
 Alice Mattison, *Bennington College*
 Judith Pascoe, *University of Iowa*
 Kristen Poole, *University of Delaware*
 Paul Saint-Amour, *University of Pennsylvania*
 Andrea Stevens, *University of Illinois at Urbana-Champaign*
 Jamie Taylor, *Bryn Mawr College*

Environmental Studies

Albert Markhart, *University of Minnesota*

Gender and Sexuality Studies

Lzaro Lima, *University of Richmond*
 Heather Love, *University of Pennsylvania*

History

Lisa Ubelaker Andrade, *Yale University*
 Stephen Bittner, *Sonoma State University*
 James Burns, *Clemson University*
 Lisa Kirschenbaum, *West Chester University*
 Roberta Pergher, *University of Kansas*
 Janice Reiff, *University of California, Los Angeles*
 Jessica Roney, *Ohio University*
 Jonathan Sassi, *College of Staten Island of the City University of New York*
 Elly Truitt, *Bryn Mawr College*
 Sharon Ullman, *Bryn Mawr College*

Interpretation Theory

Hans Vaegt, *Smith College*

Islamic Studies

Jason Bivins, *North Carolina State University*

Linguistics

Mohammad Alhawary, *University of Michigan*
 Eugene Buckley, *University of Pennsylvania*
 Viviane Deprez, *Rutgers University*
 Jeffrey Heinz, *University of Delaware*
 Gaurav Mathur, *Gallaudet University*
 Gene Mirus, *Gallaudet University*
 Keren Rice, *University of Toronto*
 Yael Sharvit, *University of California, Los Angeles*

15 Visiting Examiners

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Mathematics and Statistics

John Emerson, *Yale University*
 Tom Halverson, *Macalester College*
 John McCleary, *Vassar College*
 Jim Wiseman, *Agnes Scott College*

Modern Language—Chinese

Nicole Huang, *University of Wisconsin–Madison*
 Xiaorong Li, *University of California, Santa Barbara*

Modern Language—French

Jarrod Hayes, *University of Michigan*
 Pim Higginson, *Bryn Mawr College*
 Deborah Steinberger, *University of Delaware*

Modern Language—German

Hans Jurg Rindisbacher, *Pomona College*

Modern Language—Russian

Anthony Anemone, *The New School for General Studies*

Modern Language—Spanish

Persephone Braham, *University of Delaware*
 Eduardo Espina, *Texas A & M University*
 Maria Luisa Fischer, *Hunter College of the City University of New York*
 Ana Maria Amar Sanchez, *University of California, Irvine*

Music and Dance

Leslie Sprout, *Drew University*

Peace and Conflict Studies

Kurt Schock, *Rutgers University, Newark*
 Ivan Sheehan, *University of Baltimore*

Philosophy

Eric Brown, *Washington University*
 Alexander George, *Amherst College*
 Jason Miller, *Rice University*
 G. Fred Schueler, *University of Delaware*
 Kok-Chor Tan, *University of Pennsylvania*

Physics and Astronomy

Kevin Aptowicz, *West Chester University*
 John Gizis, *University of Delaware*
 John Scofield, *Oberlin College*

Political Science

Ronald Kahn, *Oberlin College*
 Nicole Mellow, *Williams College*
 Tamara Metz, *Reed College*
 Keesha Middlemass, *Rutgers University, Newark*
 Jason Neidleman, *University of La Verne*
 Amy Oakes, *The College of William and Mary*
 Chad Rector, *Marymount University*
 Shelley Rigger, *Davidson College*
 Marc Ross, *Bryn Mawr College*
 Arthur Schmidt, *Temple University*
 Dana Villa, *University of Notre Dame*

Psychology

Lynn Kirby, *Temple University*
 Benjamin Le, *Haverford College*
 Anna Papafragou, *University of Delaware*
 Acacia Parks, *Hiram College*
 Thomas Shipley, *Temple University*
 Joe Simmons, *University of Pennsylvania, The Wharton School*
 Amanda Woodward, *University of Chicago*

Public Policy

David Abler, *Pennsylvania State University*
 Julie Becher, *University of Pennsylvania School of Medicine*
 Adrienne Lucas, *University of Delaware*
 Shannon Mudd, *Haverford College*

Religion

Rebecca Alpert, *Temple University*
 Jason Bivins, *North Carolina State University*
 Lawrence White, *Tacoma Community College*

Sociology and Anthropology

Nikhil Anand, *Haverford College*
 Thomas Callaghy, *University of Pennsylvania*
 Charles Gallagher, *LaSalle University*
 Judith Goode, *Temple University*
 Kathleen Hall, *University of Pennsylvania*
 Sherine Hamdy, *Brown University*
 Matissa Hollister, *Dartmouth College*
 Susan Hyatt, *Indiana University / Purdue University*
 Janet MacGaffey, *Bucknell University*
 Bruce Mannheim, *University of Michigan*
 Kalala Ngalamulume, *Bryn Mawr College*
 Seran Schug, *Rowan University / Drexel University*
 Emilio Spadola, *Colgate University*
 Damien Stankiewicz, *Temple University*
 Karl Swinehart, *University of Pennsylvania*

Theater

Walter Bilderback, *The Wilma Theater*
 Emmanuelle Delpech, *Headlong Performance Institute; The Pig Iron Theater School*
 Kym Moore, *Brown University*
 James Peck, *Muhlenberg College*
 Karen Shimakawa, *New York University–Tisch School of the Arts*

16 Degrees Conferred

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May 27, 2012

16.1 Bachelor of Arts

Ayman Nasser Abunimer, *Physics and Biology*
 Sydni Rae Adler, *Music*
 Aurin Paola Agramonte, *Special Major in Spanish Literature and Educational Studies*
 Henry Titus Ainley, *Chemistry*
 Monica Ajinkya, *Biology and Religion*
 Peter Akkies, *Economics*
 Yewande Marianne Alade, *Economics*
 Raymundo Alfaro-Aco, *Special Major in Biochemistry*
 Kristen Carol Allen, *Linguistics*
 Emma Ea Ambrose, *Political Science*
 Harry Nicholas Apostoleris, *Physics*
 Morgan Sharp Aveni, *Ancient History and Political Science*
 Jacqueline Helene Bailey-Ross, *Russian*
 Estella Miyuki Baker, *Art and Asian Studies*
 Halleh Baratloo Balch, *Physics*
 James John Bannon, *English Literature*
 Lori Barkin, *Theater*
 Daniel Lloyd Bath, *Mathematics*
 Hunter Amadeus Bayliss, *Music and English Literature*
 Stephanie Lynn Beebe, *Economics and Sociology and Anthropology*
 Zachary Brennan Belden, *Philosophy*
 Nilo Alexandro Bermeo, *English Literature*
 Arielle Gina Bernhardt, *Economics and Sociology and Anthropology*
 Shiv Bhandari, *Economics*
 Stephanie Robin Black-Schaffer, *Special Major in English Literature and Educational Studies*
 Sara Annabelle Blanco, *English Literature*
 Harold Tobias Blum, *Mathematics*
 Bridget Konadu Boakye, *Economics*
 Francesca Alesandra Bolfo, *Art History*
 Adam Christopher Bortner, *Sociology and Anthropology*
 Alyssa Renée Bowie, *English Literature and Spanish*
 Rachel Danielle Branker, *Sociology and Anthropology*
 Maxwell Douglas Bressman, *Biology*
 Timothy Benjamin Brevart, *Special Major in Psychology and Educational Studies*
 Michael Ruben Brockway, *Economics and Spanish*
 Emily Ann Bryant, *History and Religion*
 John Walter Bukawyn, *Economics*
 Samuel James Bullard-Sisken, *Physics*
 Cecily Alexa Bumbray, *Political Science*
 Brigitte Buquez, *Sociology and Anthropology and Spanish*
 Kay Ming Cadena, *Art History and Asian Studies*
 Michael Spencer Cameron, *Political Science*
 William Eugene Edgar Campbell, *Biology*
 Jessica Alexandra Cannizzaro, *Theater*
 Lauren Cardenas, *Religion*
 Shane Jansen Casey, *Philosophy*
 Fabian Alonso Castro, *Economics and Political Science*
 Mary Jean Chan, *Political Science*
 Sarah Elizabeth Chasins, *Computer Science and Special Major in Behavioral Economics*
 Andrew Cheng, *Linguistics and Religion*
 Franklin Lee Chien, *Computer Science*
 Mark Junxuan Chin, *Economics*
 Philip Samuel Chodrow, *Philosophy and Mathematics*
 Max DeFlorio Chomet, *Biology*
 Dylan Chow, *Mathematics*
 Adam Chuong, *Psychology*
 Katharine Hammond Clark, *English Literature and Art*
 Joshua David Cockroft, *Political Science*
 Nathan Edward Cohan, *English Literature*
 Emily Lacy Coleman, *Sociology and Anthropology*
 Roberto Contreras IV, *Economics and Political Science*
 Julia Anne Cooper, *Biology*
 Natalia Cote-Munoz, *Political Science*
 Nicole Ashley Cox, *Sociology and Anthropology and Dance*
 Elizabeth Jane Cozart, *Biology*
 Daniel Bernard Cramer, *History*
 Kyle Aaron Crawford, *Political Science*
 Jennifer Casey Crick, *Biology*
 Elizabeth Ann Cushing, *Chemistry*
 Katherine Corin Cushman, *Biology*
 Jeffrey Alan Davidson, *Political Science*
 Arielle Nicole Davis, *Special Major in Film and Media Studies*
 Avery Ayers Davis, *Biology*
 Jenna Marie Davis, *Special Major in Critical Theory*
 Linnet Rose Davis-Stermitz, *Political Science*
 Leonhard Martin Deibel, *Economics*
 Hannah Christine Deming, *Biology*
 Christie Grace Denizio, *Art*
 Joravar Singh Dhaliwal, *Economics*
 John Ronald Dinh, *Art History and Computer Science*
 August Nelson Dinwiddie, *Political Science and Asian Studies*
 Ryane Amelia Disken-Cahill, *History and Theater*
 Shawn Catherine Doherty, *Comparative Literature*
 Lindsay Renée Dolan, *Economics and Political Science*
 Tania Arisa Doles, *Biology*
 Morgan Corynne Dorsey, *Biology*
 Jessica Veronica Downing, *Sociology and Anthropology*
 Rosemary Clifford DuBrin, *Political Science*
 Meredyth Phillips Duncan, *Biology and Art*
 Christina Loren Duron, *Mathematics*

16 Degrees Conferred

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Pierre Roger Dyer, *Economics*
 Aaron Christopher Eckhouse, *Political Science*
 Hannah Elizabeth Edelman, *Biology*
 Emily Ray Flores Eder, *Psychology*
 Michael Macrae Enciso Edmiston, *Theater*
 Karlyce Eudora Gloria Edwards, *Asian Studies*
 Paul Otto Karl Eisenberg, *Economics*
 Jonathan Mensch Emont, *History*
 Amanda Ryan Eng, *Economics*
 Olivia Harper Ensign, *Political Science*
 Katherine Qubain Ernst, *Psychology*
 Frederick Inglis Rudolf Eyerer, *Physics*
 Callie Elizabeth Feingold, *Political Science*
 Amalia Sarai Feld, *Political Science and Chinese*
 Michelle Margaret Fennell, *Theater*
 Christopher Francis Fernandez, *Sociology and Anthropology*
 Kenneth Stewart Flanagan, *Physics and Philosophy*
 Petra Angie Floyd, *Art*
 Andrew David Forrest, *Sociology and Anthropology*
 Melissa Afton Frick, *Biology and Economics*
 Alexander Karl Friedfeld, *Political Science*
 Dante Anthony Fuoco, *English Literature*
 Mariela Puentes Galvez, *Special Major in Psychology and Educational Studies*
 Katherine Cheng Gao, *Special Major in Neuroscience*
 Manuk Garg, *Philosophy*
 Cindy Janeth Garo, *History*
 Charlotte Elisabeth Gaw, *History and Religion*
 Nolan Thomas Gear, *English Literature*
 Maia Lauren Gerlinger, *English Literature*
 Zachary Thomas Gershenson, *Biology and Religion*
 Michael Roesch Giannangeli, *Economics*
 Sahiba Kaur Gill, *Political Science*
 Kenyetta D. Givans, *Biology*
 Naomi Reid Glassman, *Special Major in Latin American Studies*
 Eleanor Rachel Glewwe, *Special Major in Linguistics and Languages*
 Joshua Hadas Glickenhau, *Political Science*
 Will Abraham Glovinsky, *Comparative Literature*
 Jonathan Donnelly Gluck, *Computer Science and Linguistics*
 Michael Thomas Gluk, *Philosophy*
 Kyle Andrew Goeckner-Wald, *Political Science*
 Kathryn Eveline Gonzalez, *Economics and Art*
 Samantha Nicole Griggs, *Special Major in Sociology and Anthropology and Educational Studies*
 Leah Guthrie, *Biology*
 Elizabeth Jennette Hamilton, *Physics*
 Hilary Whitmer Hamilton, *Special Major in English Literature and Educational Studies*
 Silbia Han, *Political Science*
 Phoebe Swan Hansen, *Psychology*
 Adam Reginald Hardy, *Biology*
 Lara Patricia Hasychak, *Linguistics*
 Benjamin Clifford Hattem, *Special Major in Creative Writing and Sociology and Anthropology*
 Lang Daniel Haynes, *Religion*
 Toby Heavenrich, *Economics*
 Layla Adel Helwa, *Special Major in History and Educational Studies*
 Marjorie Griffith Herbert, *Linguistics*
 Solange Hilfinger-Pardo, *History and Economics*
 David Lucas Hinojosa, *Special Major in Japanese*
 Robert McDavid Holowka, *English Literature*
 Virginia Marguerite Hottinger, *Art*
 Maxwell Scott Hubbard, *Biology and Economics*
 Jonathan W.H. Hui, *Economics and Psychology*
 Franklin Charles Huntington V, *English Literature and Special Major in Linguistics and Languages*
 Ogechi Nosazena Ironi, *Special Major in Psychology and Educational Studies*
 Ou (Rowen) Jin, *Biology*
 Brendan John, *Mathematics and Physics*
 Jennifer Wolfe Johnson, *Linguistics*
 Hannah Louise Jones, *Sociology and Anthropology*
 James Brice Jordan, *Russian and Sociology and Anthropology*
 Rebekah Michelle Judson, *Special Major in History and Educational Studies and Russian*
 Rachel Elizabeth Kalman, *Psychology*
 Alexander Juyoung Kang, *History and Asian Studies*
 Zachary Aaron Kelm, *Psychology*
 Robert Hyungchan Kim, *Political Science*
 Wesley Morgan King, *Biology*
 William Bollinger King, *Psychology*
 Holly Anne Kinnamont, *Special Major in Film and Media Studies and English Literature*
 Ari Steven Klafter, *Psychology*
 Amanda Ruth Klause, *Greek and Latin*
 Philip Haywood Koonce IV, *Computer Science*
 Philip Jojo Koshy, *Biology*
 Hanna Margaret Kozlowska, *Political Science*
 Tarini Atul Kumar, *English Literature and Special Major in Media and Peacebuilding*
 Matthew Clayton Lamb, *Economics and Political Science*
 Elizabeth Linda Laplace, *Biology and Art*
 Rosalie Estelle Lawrence, *Biology*
 Alexander Lee, *Biology and Political Science*
 Allison Margaret Lee, *English Literature*
 Ester Lee, *History and English Literature*
 Eun Mi Lee, *Economics and Mathematics*
 Tiffany Chih Lee, *Chemistry*
 Eric Craig Legunn, *Economics*
 Alexander Henry Leichter, *Economics*
 Margaret Inez Clancy Lenfest, *Biology*
 Zachary Robert Leonard, *Sociology and Anthropology*
 Keenan Richard Leonard-Solis, *Psychology*
 Anna Tione Levine, *English Literature*

16 Degrees Conferred

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Anastasia Margaret Lewis, *English Literature and Art*
 Naomi Alina Liang, *Philosophy*
 Jong Hsien Lim, *Physics and Economics*
 Cory Lee Limberger, *Economics*
 Michelle Lin, *Art*
 William James Lin, *Political Science*
 Matthew Henry Linder, *Mathematics*
 Benjamin Gabriel Seidler Lipton, *Computer Science*
 Natalie Frawley Litton, *Political Science*
 Lance Yi Liu, *Economics*
 Tianyu Liu, *Biology*
 Megan Kendall Long, *Sociology and Anthropology*
 Emily Elizabeth Lowing, *Psychology*
 Cindy Coleman Luu, *Mathematics and Asian Studies*
 Daniel Chan Ly, *Biology and Chemistry*
 Sung Min Ma, *Economics*
 Joseph Anthony Maiorana, *Special Major in Film and Media Studies and Sociology and Anthropology*
 James Mao, *Political Science and Economics*
 Arsean Stewart Maqami, *Economics*
 Mayra Elena Marquez, *Economics*
 Lizah Cherop Masis, *Economics and Mathematics*
 Owen Thomas Masters, *Psychology and English Literature*
 Andrew Finhai Masviken, *Psychology*
 Elizabeth Luce Matlock, *Biology and Religion*
 Carolyn Kathleen Maughan, *Philosophy*
 MC Mazzocchi, *Greek*
 Kathryn Florence McCafferty, *Special Major in Linguistics and Languages*
 Genevieve Elizabeth McGahey, *History*
 Kathleen Margaret McNamara, *Mathematics*
 Angela Qingyi Meng, *Sociology and Anthropology and Economics*
 Gloria Arabah Mensah, *Special Major in Political Science and Sociology and Anthropology*
 Samuel Jay Menzin, *History*
 Jonathan Kiyoshi Louis Miller, *Special Major in Islamic Studies*
 Amelia Rose Mitter-Burke, *Special Major in History and Educational Studies*
 Gabriela Echavarria Moats, *Special Major in Psychology and Educational Studies*
 Anthony Joseph Montalbano, *English Literature and Psychology*
 Gabriela Inés Morales, *Political Science*
 Annelise Valerie Rossetti Mowry, *Biology*
 Marie Frances Mutryn, *Biology*
 Jeffrey Paul Nagle, *History*
 Ivana Ng, *Computer Science*
 Lam-Anh Nguyen, *Biology and Sociology and Anthropology*
 Joseph Frederic Niagara, *Special Major in English Literature and Educational Studies*
 Alex Lee Nichamin, *Economics*
 John Michael Nicoludis, *Special Major in Biochemistry*
 Rakan Zachary Nimr, *History*
 Alicia Phyllis Ashaba Niwagaba, *Biology*
 Danielle Joy Noble, *History*
 Jared Fortner Nolan, *Economics*
 Regina Albert Noto, *Art History*
 Ari Jason Novack, *Physics*
 Benjamin Ethan Nye, *Computer Science*
 Christina Ebogu (Ebella) Obiajulu, *Linguistics*
 Shane Roshan Ogunnaik, *Special Major in Sociology and Anthropology and Educational Studies*
 Joseph Vale O'Hara, *Political Science*
 David Selassie Bampo Opoku, *Biology*
 Camila Osorio van Isschot, *Special Major in Sociology and Anthropology and Educational Studies*
 Daniel Minwoo Pak, *Chemistry*
 Wystan Neil Palmer, *Computer Science and Chemistry*
 Sonal Parasrampur, *Political Science*
 Hae-in Park, *Economics and Chinese*
 Hyuna Park, *Special Major in Asian Studies and Educational Studies*
 Jung Hyun Park, *Economics and Chinese*
 Richard Merton Peck, *Economics and Mathematics*
 Carmen Perez-Leahy, *Psychology*
 Genevieve Louise Foster Pezzola, *Economics*
 Tayarisha Mtafuta-Ukweli Poe, *Special Major in Film and Literature*
 Travis Ross Pollen, *Physics*
 Hilary Floyd Pomerantz, *Special Major in History and Educational Studies*
 Laura Davidson Pond, *Latin*
 Adriana Popa, *Political Science*
 Amelia Louise Possanza, *Comparative Literature*
 Susanna Fleming Pretzer, *Comparative Literature*
 Kevin James Pytlar, *Mathematics and Computer Science*
 David Qasem, *Economics*
 Weina Qiu, *Economics and Political Science*
 Tarit Rao-Chakravorti, *Special Major in Peace and Conflict Studies and Economics*
 Nicholas Andrew Rhinehart, *Computer Science*
 Nicole Marie Rizzo, *Biology and English Literature*
 Laura Hyun Hwa Rodgers, *Biology*
 Ignacio Javier Rodriguez, *History*
 Maria Alejandra Rodriguez, *Special Major in Sustainable Development and Sociology and Anthropology*
 Marc Stephen Rogalski, *Economics*
 Alexander Scott Rolle, *Mathematics*
 Ana Carmin Rosado, *History*
 Hannah Rachel Rose, *Chemistry*
 Micah Fisher Rose, *Sociology and Anthropology*
 Tanya Rosenblut, *Economics*

16 Degrees Conferred

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Spencer Alex Ross, *Economics*
 Marie Rousseau, *Political Science*
 Shari Alexa Rutherford, *Mathematics*
 Maki Sakuma, *Mathematics*
 David Winthrop Hilding Salorio, *Economics and English Literature*
 Hillary Antonia Santana, *Biology*
 Miles John Santo, *Biology*
 Sterling Chase Satterfield, *Political Science*
 Jacqueline Marie Scala, *Biology and History*
 Katherine Hanna Schaffer, *Special Major in Gender and Sexuality Studies*
 Sarah Christine Scheub, *Biology*
 William Joseph Scheuing, *Biology and Economics*
 Jessica Lee Schleider, *Psychology*
 Brittany Pearl Schmelz, *Psychology*
 Zachary Randolph Schmidt, *Economics*
 Diandra Wagner Schmitt, *English Literature*
 Omari James Robert Scott, *Political Science*
 Camilla Eugenia Seirup, *Biology*
 Katherine Andersen Seville, *English Literature and Biology*
 Lisa Shang, *Special Major in Psychobiology*
 Dina Sharhan, *Biology*
 Christopher Thomas Shea, *Biology*
 Shiran Shen, *Political Science*
 Patrick Damien Shields, *Economics*
 Molly Elysha Siegel, *Biology*
 Corey Jacob Silberstein, *Music*
 Elan William Silberblatt-Buser, *Biology*
 Amira Batsheva Silver-Swartz, *Linguistics*
 James Edward Smith, *Physics*
 Thomas Leslie Soares, *Economics and Art*
 Maki Dionne Balite Somosot, *Psychology and French*
 Samantha Rosalie Song, *Biology*
 Joseph Stanley Spagna, *English Literature*
 Kenneth William Sparks, *Biology*
 Marley Anna Spector, *Economics*
 Julie Spielvogel, *Art History*
 Kimberly Marie St. Julian, *History*
 Lauren Cecelia Stern, *History*
 David Turner Sterngold, *Political Science*
 John Edward Stevick, *Economics*
 Kara Ann Stoevers, *Biology and English Literature*
 Walker Donalriddle Stole, *Economics*
 Glenn Gilmore Stott, *Psychology*
 Evelyn Ariel Henderson Strombom, *Biology*
 Andrew Buckman Stromme, *Computer Science*
 Allison Taylor Stuewe, *Sociology and Anthropology and Special Major in Islamic Studies*
 John Miller Taeschler, *English Literature*
 Aden Delawit Tedla, *History*
 Min Sern Teh, *Political Science*
 Rajesh Sean Thackurdeen, *Sociology and Anthropology*
 Ankhi Guha Thakurta, *English Literature and Sociology and Anthropology*
 Mary Alice Upshur, *Chemistry*
 Victor Carmine Vaiana, *Special Major in Film and Media Studies*
 Nicholas Matthew Vogt, *Special Major in Neuroscience*
 Michelle Elizabeth Walters, *Biology*
 Michael Alex Waterhouse, *Special Major in Psychobiology*
 Zachary Jonathan Weiner, *Economics*
 Darren Lynn Weinhold, *Special Major in Astrophysics*
 Paul Frederick Weston, *Philosophy*
 Jeffery Christian Wickham, *History and Political Science*
 Zachary Saul Wiener, *Special Major in Linguistics and Educational Studies*
 Sasha Maree Wijeyeratne, *Sociology and Anthropology*
 David Philip Wilikofsky, *Computer Science and Art History*
 Joseph Harold Willens, *Political Science*
 Madeline Jeanne Williams, *History*
 Xavier Stefan Williams, *Political Science*
 John Wesley Wei Willison, *Political Science*
 Elissa Li-Yee Wong, *Biology*
 Genevieve Elise Woodhead, *History*
 Taylor Corinne Wuerker, *Mathematics*
 Xu Xu, *Political Science*
 David Yang, *Economics*
 Jennifer Youngshin Yi, *Psychology*
 Stephen Alexander Youngblood, *Philosophy*
 Hannah Alexandra Younger, *English Literature and Art*
 Xingyu Zhang, *Physics*
 Alan Zhen Zhao, *Economics*
 Fanny Zhao, *Art*
 Jenna Hanbing Zhu, *Political Science and Psychology*

16.2 Bachelor of Science

Andreas Linas Bastian, *Engineering*
 Katherine Ann Bertaut, *Engineering*
 Anthony Albert Blekicki, *Engineering*
 Matthew John Bowers, *Engineering*
 Eric Michael Burger, *Engineering*
 Alexander Lawrence Burka, *Engineering*
 Taylor Jie Chen, *Engineering*
 David Joseph D'Annunzio, *Engineering*
 Wesley Christopher Edwards, *Engineering*
 Ozan Erturk, *Engineering*
 Toby Heavenrich, *Engineering*
 Frances Rose Hunter, *Engineering*
 Jesse Holloway Krikorian, *Engineering*
 Julian Corbell Leland, *Engineering*
 Benjamin Gabriel Seidler Lipton, *Engineering*
 Jonathan Atwood Martin, *Engineering*
 Ari Jason Novack, *Engineering*
 Genevieve Louise Foster Pezzola, *Engineering*
 Nicholas Andrew Rhinehart, *Engineering*
 David Benjamin Saltzman, *Engineering*
 Marley Anna Spector, *Engineering*
 Rebekah Yung-Chia Yang, *Engineering*

17 Distinctions, Awards, and Fellowships

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17.1 Honors Awarded by the Visiting Examiners

Highest Honors

Arielle Gina Bernhardt, Sarah Elizabeth Chasins, Katherine Corin Cushman, Avery Ayers Davis, Linnet Rose Davis-Stermitz, Will Abraham Glovinsky, Anna Tione Levine, James Mao, Genevieve Elizabeth McGahey, Amelia Louise Possanza, Katherine Hanna Schaffer, Xingyu Zhang

High Honors

Peter Akkies, Estella Miyuki Baker, James John Bannon, Lori Barkin, Daniel Lloyd Bath, Harold Tobias Blum, Francesca Alessandra Bolfo, Jessica Alexandra Cannizzaro, Mary Jean Chan, Philip Samuel Chodrow, Nathan Edward Cohan, Jennifer Casey Crick, Shawn Catherine Doherty, Jessica Veronica Downing, Rosemary Clifford DuBrin, Aaron Christopher Eckhouse, Hannah Elizabeth Edelman, Jonathan Mensch Emont, Amanda Ryan Eng, Olivia Harper Ensign, Michelle Margaret Fennell, Melissa Afton Frick, Alexander Karl Friedfeld, Dante Anthony Fuoco, Charlotte Elisabeth Gaw, Nolan Thomas Gear, Sahiba Kaur Gill, Naomi Reid Glassman, Eleanor Rachel Glewwe, Jonathan Donnelly Gluck, Kyle Andrew Goeckner-Wald, Hilary Whitmer Hamilton, Marjorie Griffith Herbert, Solange Hilfinger-Pardo, Franklin Charles Huntington V, Jennifer Wolfe Johnson, Robert Hyungchan Kim, Amanda Ruth Klause, Rosalie Estelle Lawrence, Anastasia Margaret Lewis, William James Lin, Angela Qingyi Meng, Gabriela Inés Morales, John Michael Nicoludis, Jared Fortner Nolan, Richard Merton Peck, Adriana Popa, Alexander Scott Rolle, Shiran Shen, David Turner Sterngold, Allison Taylor Stuewe, John Miller Taeschler, Nicholas Matthew Vogt, Zachary Jonathan Weiner, Jeffery Christian Wickham, Joseph Harold Willens, Madeline Jeanne Williams, John Wesley Wei Willison, Hannah Alexandra Younger, Jenna Hanbing Zhu

Honors

Yewande Marianne Alade, Morgan Sharp Aveni, Alyssa Renée Bowie, Emily Ann Bryant, William Eugene Edgar Campbell, Andrew Cheng, Mark Junxuan Chin, Dylon Chow, Julia Anne Cooper, Natalia Cote-Munoz, Jeffrey Alan Davidson, Andrew David Forrest, Maia Lauren Gerlinger, Michael Thomas Gluk, Robert McDavid Holowka, Alexander Juyoung Kang, William Bollinger King, Tarini Atul Kumar, Allison Margaret Lee, Ester Lee, Natalie Frawley Litton, Lance Yi Liu, Gabriela Echavarría Moats, Sonal Parasrampuria, Laura Davidson Pond, Tarit Rao-Chakravorti, Laura Hyun Hwa Rodgers, Tanya Rosenblut, David Winthrop Hilding Salorio, Zachary Randolph Schmidt, Elan William Silverblatt-Buser,

Genevieve Elise Woodhead, Stephen Alexander Youngblood, Alan Zhen Zhao

17.2 Elections to Honorary Societies

Phi Beta Kappa

Estella Miyuki Baker, Arielle Gina Bernhardt, Katherine Ann Bertaut, Shiv Bhandari, Harold Tobias Blum, Mary Jean Chan, Sarah Elizabeth Chasins, Andrew Cheng, Philip Samuel Chodrow, Daniel Bernard Cramer, Kyle Aaron Crawford, Katherine Corin Cushman, David Joseph D'Annunzio, Avery Ayers Davis, Linnet Rose Davis-Stermitz, Leonhard Martin Deibel, Hannah Christine Deming, Jessica Veronica Downing, Rosemary Clifford DuBrin, Aaron Christopher Eckhouse, Hannah Elizabeth Edelman, Amanda Ryan Eng, Amalia Sarai Feld, Christopher Francis Fernandez, Dante Anthony Fuoco, Nolan Thomas Gear, Eleanor Rachel Glewwe, Will Abraham Glovinsky, Solange Hilfinger-Pardo, Rebekah Michelle Judson, Amanda Ruth Klause, Rosalie Estelle Lawrence, William James Lin, Benjamin Gabriel Seidler Lipton, Tianyu Liu, James Mao, MC Mazzocchi, Kathryn Florence McCafferty, John Michael Nicoludis, Wystan Neil Palmer, Hae-in Park, Amelia Louise Possanza, Susanna Fleming Pretzer, David Benjamin Saltzman, Katherine Hanna Schaffer, Jessica Lee Schleider, Shiran Shen, Corey Jacob Silberstein, Amira Batsheva Silver-Swartz, Julie Spielvogel, Allison Taylor Stuewe, Ankhi Guha Thakurta, Nicholas Matthew Vogt, David Philip Wilikofsky, Jennifer Youngshin Yi, Xingyu Zhang

Sigma Xi

Ayman Nasser Abunimer, Yewande Marianne Alade, Raymundo Alfaro-Aco, Halleh Baratloo Balch, Katherine Ann Bertaut, Anthony Albert Bleicki, Alexander Lawrence Burka, William Eugene Edgar Campbell, Sarah Elizabeth Chasins, Mark Junxuan Chin, Max DeFlorio Chomet, Adam Chuong, Julia Anne Cooper, Jennifer Casey Crick, Katherine Corin Cushman, David Joseph D'Annunzio, Hannah Christine Deming, Joravar Singh Dhaliwal, Tania Arisa Doles, Meredith Phillips Duncan, Christina Loren Duron, Hannah Elizabeth Edelman, Melissa Afton Frick, Katherine Cheng Gao, Leah Guthrie, Elizabeth Jennette Hamilton, Adam Reginald Hardy, Toby Heavenrich, Jonathan W.H. Hui, Frances Rose Hunter, Zachary Aaron Kelm, William Bollinger King, Rosalie Estelle Lawrence, Julian Corbell Leland, Jong Hsien Lim, Benjamin Gabriel Seidler Lipton, Tianyu Liu, Daniel Chan Ly, Owen Thomas Masters, Elizabeth Luce Matlock, Lam-Anh Nguyen, John Michael Nicoludis, David Selassie Bampo Opoku, Daniel Minwoo Pak, Genevieve Louise

17 Distinctions, Awards, and Fellowships

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Foster Pezzola, Nicholas Andrew Rhinehart, Laura Hyun Hwa Rodgers, Hannah Rachel Rose, Maki Sakuma, David Benjamin Saltzman, Sarah Christine Scheub, Jessica Lee Schleider, Camilla Eugenia Seirup, Lisa Shang, Shiran Shen, Molly Elysha Siegel, Elan William Silverblatt-Buser, Maki Dionne Balite Somosot, Kenneth William Sparks, Marley Anna Spector, Evelyn Ariel Henderson Strombom, Andrew Buckman Stromme, Mary Alice Upshur, Nicholas Matthew Vogt, Michelle Elizabeth Walters, Darren Lynn Weinhold, Elissa Li-Yee Wong, Rebekah Yung-Chia Yang, Jennifer Youngshin Yi, Xingyu Zhang

Tau Beta Pi

Katherine Ann Bertaut, Alexander Lawrence Burka, David Joseph D'Annunzio, Benjamin Gabriel Seidler Lipton, David Benjamin Saltzman

17.3 Pennsylvania Teacher Certification

Stephanie Robin Black-Schaffer, Timothy Benjamin Brevart, Layla Adel Helwa, Joseph Frederic Niagara, Camila Osorio van Isschot

17.4 Awards and Prizes

The Bruce Abernethy Community Service Award was created by Bruce Abernethy '85 to support Swarthmore students, faculty, and staff involved in community service. Awarded to Daniel Cho '13 and Leah Guthrie '12.

The Adams Prize is awarded each year by the Economics Department for the best paper submitted in quantitative economics. Awarded to Amanda Eng '12.

The Stanley Adamson Prize in Chemistry was established in memory of Stanley D. Adamson '65. It is awarded each spring to a well-rounded junior majoring in chemistry or biochemistry, who, in the opinion of the department, gives the most promise of excellence and dedication in the field. Awarded to Alice Wong '13.

The American Chemical Society Scholastic Achievement Award is given to the student whom the Department of Chemistry and Biochemistry judges to have the best performance in chemistry and overall academic achievement. Awarded to Jack Nicoludis '12.

The American Chemical Society Undergraduate Award in Analytical Chemistry is awarded annually to the student whom the Chemistry and Biochemistry Department judges to have the best academic performance in analytical chemistry and instrumental methods. Awarded to Jacob Tracy '13.

The American Chemical Society Undergraduate Award in Inorganic Chemistry is awarded annually to the student whom the Chemistry

and Biochemistry Department judges to have the best academic performance in inorganic chemistry. Awarded to Steven Barrett '13.

The American Chemical Society Undergraduate Award in Organic Chemistry is awarded annually to the student whom the Chemistry and Biochemistry Department judges to have the best academic performance in organic chemistry. Elena Kingston '14.

The American Institute of Chemists Student Honor Awards are given to students whom the Chemistry and Biochemistry Department judge to have outstanding records in chemistry and overall academic performance. Awarded to Wystan Neil Palmer '12.

The Solomon Asch Award recognizes the most outstanding independent work in psychology, usually a senior course or honors thesis. Awarded to Jessica Lee Schleider '12.

The Boyd Barnard Prize, established by Boyd T. Barnard '17 is awarded by the music faculty each year to a student in the junior class in recognition of musical excellence and achievement. Awarded to Joyce Han '13 and Benjamin Kapilow '13.

The James H. Batton '72 Award, endowed in his memory by G. Isaac Stanley '73 and Ava Harris Stanley '72, is awarded for the personal growth or career development of a minority student with financial need. Awarded to Rebecca Ahmad '14.

The Paul H. Beik Prize in History is awarded each May for the best thesis or extended paper on a historical subject by a history major during the previous academic year. Awarded to Madeline Williams '12.

The Believe Endowed Social Action Award was established in 2006 to enable students to spend the summer in a developing country working on a global social action project. The Mission of the Believe Award is "To support inspired global citizens who believe in the reality of a better world, and who believe that the key to peace and progress in the world is to develop personal connections in other cultures through social action and direct community engagement." The Believe award is administered through the Lang Center for Social Responsibility. Awarded to Min Sern Teh '12.

The Bobby Berman '05 Memorial Prize Fund was established in 2008 in his memory, by his family. It is awarded by the Physics Department to a graduating senior with a major in physics who has shown achievement, commitment and leadership in the field. Awarded to Halleh Balch '12.

The Tim Berman Memorial Award is presented annually to the senior man who best combines qualities of scholarship, athletic skill, artistic sensitivity, respect from and influence on peers,

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courage, and sustained commitment to excellence. Awarded to David D'Annunzio '12.

The Black Alumni Prize is awarded annually to honor the sophomore or junior minority student who has shown exemplary academic performance and community service. Awarded to Naudia Williams '14.

The Brand Blanshard Prize honors Brand Blanshard, professor of philosophy at Swarthmore from 1925 to 1945, and was established by David H. Scull '36. The Philosophy Department presents the award each year to the student who submits the best essay on any philosophical topic. Not awarded this year.

The Sophie and William Bramson Prize is awarded annually to an outstanding student majoring in sociology and anthropology. The prize recognizes the excellence of the senior thesis, in either the course or external examinations program as well as the excellence of the student's entire career in the department. The Bramson Prize is given in memory of the parents of Leon Bramson, founding chairman of Swarthmore's Sociology and Anthropology Department. Awarded to Nicole Cox '12 and Christopher Fernandez '12.

The Heinrich W. Brinkmann Mathematics Prize honors Heinrich Brinkmann, professor of mathematics from 1933 to 1969, and was established by his students in 1978 in honor of his 80th birthday. Awards are presented annually by the Mathematics and Statistics Department to the student or students who submit the best paper on a mathematical subject. Awarded to Philip Chodrow '12 and Christina Duron '12.

The Chemistry and Biochemistry Department Service Awards are given each year to the students (usually one junior and one senior) who have provided the department with the greatest service during the preceding academic year. Awarded to Mariah Parker '13 and Raymundo Alfaro-Aco '12.

The Susan P. Cobbs Scholarship is awarded to the most outstanding student of classics in the rising senior class. It was made possible by a bequest of Susan P. Cobbs, who was dean and professor of classics until 1969, and by additional funds given in her memory. Not awarded this year.

The Sarah Kaighn Cooper Scholarship, founded by Sallie K. Johnson in memory of her grandmothers, Sarah Kaighn and Sarah Cooper, is awarded to the member of the junior class who is judged by the faculty to have had the best record for scholarship, character, and influence since entering the College. Awarded to Ben Goossen '13.

The CRC Press Freshman Chemistry

Achievement Award is awarded annually by the Chemistry and Biochemistry Department to the first-year student(s) who achieves the highest performance in the first-year chemistry curriculum. Awarded to Grace Quinn '15.

The Alice L. Crossley Prize in Asian studies is awarded annually by the Asian Studies Committee to the student or students who submit the best essays on any topic in Asian studies. Awarded to Francesca Bolfo '12 and Amalia Feld '12 (first prize), and Jonathan Molloy '14 (honorable mention).

The Dunn Trophy was established in 1962 by a group of alumni to honor the late Robert H. Dunn, a Swarthmore coach for more than 40 years. It is presented annually to the sophomore male who has contributed the most to the intercollegiate athletics program. Awarded to Jeffrey Wall '14.

The Robert S. DuPlessis Prize is awarded each May to a student for the best senior comprehensive research paper on a historical subject by a history major in the previous year. Awarded to Jeffrey Nagle '12 and Hilary Pomerantz '12.

The William C. Elmore Prize is given in recognition of distinguished academic work. It is awarded annually to a graduating senior majoring in physics, astrophysics, or astronomy. Awarded to Xingyu Zhang '12.

The Lew Elverson Award is given in honor of Lew Elverson, who was a professor of physical education for men from 1937 to 1978. The award is presented annually to the junior or senior man who has demonstrated commitment and dedication to excellence and achieved the highest degree of excellence in his sport. Awarded to Micah Rose '12.

The Flack Achievement Award, established by Jim and Hertha Flack in 1985, is given to a deserving student who, during his or her first two years at the College, has demonstrated leadership potential and a good record of achievement in both academic and extracurricular activities. Awarded to Victor Brady '13 and Madeleine Jennie Reichman '13.

The Renee Gaddie Award. In memory of Renee Gaddie '93, this award is given by the music faculty to a member of the Swarthmore College Gospel Choir who is studying voice through the Music Department (MUSI 048: Individual Instruction) program. The award subsidizes the entire cost of voice lessons for that semester. Awarded to Aden Tedla '12.

The Dorothy Ditter Gondos Award was bequeathed by Victor Gondos Jr. in honor of his wife, Class of 1930. It is given every other year by a faculty committee to a student of

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Swarthmore College who submits the best paper on the subject dealing with a literature of a foreign language. The prize is awarded in the spring semester. Preference is given to essays based on works read in the original language. The prize is awarded under the direction of the Literature Committee. Awarded to Benjamin Goossen '13 and Will Glovinsky '12 (co-winners of first prize), and Alexander Rojavin '15 (second prize).

The John Russell Hayes Poetry Prizes are offered for the best original poem or for a translation from any language. Awarded to Elizabeth Johnson '15 (first prize) and Amelia Possanza '12 (second prize).

The Eleanor Kay Hess Award is given in honor of "Pete" Hess, whose 33 years of service to Swarthmore College and Swarthmore students were exemplified by her love of athletics, leadership, hard work, fairness, and objectivity. This award is given to the sophomore woman who best demonstrates those qualities and has earned the respect and affection of her peers for her scholarship and dedication through athletics. Awarded to Lia Carlson '14.

The Philip M. Hicks Prizes are endowed by friends of Philip M. Hicks, former professor of English and chairman of the English Literature Department. They are awarded to the students who submit the best critical essays on any topic in the field of literature. Awarded to Nicholas Allred '13 and Anna Shechtman '13.

The Jesse H. Holmes Prize in Religion was donated by Eleanor S. Clarke '18 and named in honor of Jesse Holmes, a professor of history of religion and philosophy at Swarthmore from 1899 to 1934. It is awarded by the Religion Department to the student who submits the best essay on any topic in the field of religion. Awarded to Philip Chodrow '12 and Dina Zingaro '13.

The Gladys Irish Award is presented to the senior woman who has best combined devotion to excellence in athletic performance with qualities of strong leadership and the pure enjoyment of sports activities at Swarthmore. Awarded to Kenyetta Givans '12.

The Ivy Award is made by the faculty each year to the man of the graduating class who is outstanding in leadership, scholarship, and contributions to the College community. Awarded to Philip Chodrow '12.

The Chuck James Literary Prize is awarded to the graduating senior who has made the greatest contribution to the literary life of the black community. Awarded to Tayarisha Poe '12.

The Michael H. Keene Award, endowed by the family and friends of this member of the Class of 1985, is awarded by the dean to a worthy student to honor the memory of Michael's

personal courage and high ideals. It carries a cash stipend. Awarded in confidence to a worthy member of the graduating class.

The Naomi Kies Award is given in her memory by her classmates and friends to a student who has worked long and hard in community service outside the academic setting, alleviating discrimination or suffering, promoting a democratic and egalitarian society, or resolving social and political conflict. It carries a cash stipend. Awarded to Adam Bortner '12.

The Kwink Trophy, first awarded in 1951 by the campus managerial organization known as the Society of Kwink, is presented by the faculty of the Physical Education and Athletics Department to the senior man who best exemplifies the society's five principles: service, spirit, scholarship, society, and sportsmanship. Awarded to Kyle Crawford '12.

The Lang Award was established by Eugene M. Lang '38. It is given by the faculty to a graduating senior in recognition of outstanding academic accomplishment. Awarded to Amanda Klause '12 and Tianyu Liu '12.

The Leo M. Leva Memorial Prize was established by his family and friends and is awarded by the Biology Department to a graduating senior in biology whose work in the field shows unusual promise. Awarded to Tianyu (Tom) Liu '12, Katherine Cushman '12, David Opoku '12 and Rosalie Lawrence '12.

The Linguistics Prizes were established in 1989 by contributions from alumni interested in linguistics. Two awards are presented annually, one for linguistic theory and one for applied linguistics, to the two students who, in the opinion of the program in linguistics, submit the best senior papers or theses in these areas. *The Linguistics Prize in Applications of Theory* was awarded to Jennifer Johnson '12. *The Linguistics Prize in Linguistic Theory* was awarded to Rebecca Knowles (Haverford College) '12.

The McCabe Engineering Award, founded by Thomas B. McCabe '15, is presented each year to the outstanding engineering student in the senior class. A committee of the Engineering Department faculty chooses the recipient. Awarded to Benjamin Lipton '12.

The Norman Meinkoth Field Biology Award was established by his friends and former students to honor Dr. Norman A. Meinkoth, a member of the College faculty from 1947 to 1978. It is awarded to support the essential costs of the study of both naturalistic and experimental biological studies in a natural environment. The intent of this fund is to facilitate the joint participation of Swarthmore students and faculty in field biology projects, with priority given to marine biology. The

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awards are given annually by the Biology Department. Awarded to Rachel Crane '13, Hyee Ryun Lee '14, and Zhengyang Wang '14.

The Morris Monsky Prize in Mathematics was established by a gift from the children of Morris Monsky, who fell in love with mathematics at Boys' High and at Columbia University and maintained the passion all his life. This prize in his memory is awarded to a first-year student who has demonstrated outstanding promise and enthusiasm. Awarded to Peng Zhao '15.

The Kathryn L. Morgan Award was established in 1991 in honor of late Professor of History, Kathryn L. Morgan. The award recognizes the contributions of members of the African American community at the College to the intellectual and social well-being of African American students. The Morgan fund also supports acquisitions for the Black Cultural Center Library. The fund is administered by the Dean's Office and the Black Cultural Center in consultation with alumni. Not awarded this year.

The Lois Morrell Poetry Award, given by her parents in memory of Lois Morrell '46, goes to the student who has submitted the best original poem in the annual competition for this award. The fund also supports campus readings by visiting poets. Awarded to Sara Blazevic '15.

The Morrell-Potter Summer Stipend in Creative Writing, intended to enable a summer's writing project, is awarded by the English Literature Department to a poet or fiction writer of exceptional promise in the spring of the junior year. Awarded to Nicholas Gettino '13 and Paul LaFreniere '13.

The A. Edward Newton Library Prize, endowed by A. Edward Newton, to make permanent the Library Prize first established by W.W. Thayer, is awarded annually by the Committee of Award to the undergraduate who shows the best and most intelligently chosen collection of books upon any subject. Particular emphasis is laid not merely upon the size of the collection but also on the skill with which the books are selected and upon the owner's knowledge of their subject matter. Awarded to Ben Goossen '13 (first prize), Joan Huang '15 (second prize), Madeleine Booth '15 (third prize), Miyuki Baker '12 (honorable mention).

The Oak Leaf Award is made by the faculty each year to the woman of the graduating class who is outstanding in leadership, scholarship, and contributions to the College community. Awarded to Rosalie Lawrence '12.

The May E. Parry Memorial Award, donated by the Class of 1925 of which she was a member, is presented by the Physical Education and Athletics Department faculty to the senior woman who has made a valuable contribution

to the College by her loyalty, sportsmanship, and skill in athletics. Awarded to Marie Mutryn '12.

The Drew Pearson Prize is awarded by the dean on the recommendation of the editors of The Phoenix, The Daily Gazette, and the senior producers of War News Radio at the end of each staff term to a member of those respective organizations for excellence in journalism. The prize was established by the directors of The Drew Pearson Foundation in memory of Drew Pearson, Class of 1919. It carries cash stipends. Awarded to Reem Abdou '14, Jared Nolan '12, David Sterngold '12, and Alan Zhao '12.

The David A. Peele '50 Sportsmanship Award is made to a tennis player after submission of a written essay. It is endowed by Marla Hamilton Peele in memory of her husband's love and advocacy of tennis and carries a cash stipend. Awarded to Preston Poon '14.

The John W. Perdue Memorial Prize, established in 1969 in memory of an engineering student of the Class of 1969, is awarded by the Engineering Department to the outstanding student entering the junior class with a major in engineering. Awarded to Kyle Knapp '14.

The William Plumer Potter Public Speaking Fund and Prize in Fiction was established in 1927. It provides funds for the collection of recorded literature and sponsors awards for the best student short stories. The fund is also a major source of funds for campus appearances by poets and writers. Awarded to Jeannette Leopold '13 (first prize), Susanna Pretzer '12 (second prize), and Benjamin Schwartz '13 (third prize).

The Ernie Prudente Sportsmanship Award is given in honor of Ernie Prudente, a coach and professor at Swarthmore College for 27 years, to the male and female athletes that, through their participation, have demonstrated the characteristic exemplified by Ernie: sportsmanship, love of the sport, and respect for their teammates. Awarded to Michael Giannangeli '12 and Hillary Santana '12.

The Dinny Rath Award is administered by the Athletics Department and is given to a senior woman who demonstrates the highest degree of achievement, commitment to intercollegiate athletics, high regard for fair play, and awareness of the positive values of competition. Awarded to Genevieve Pezzola '12.

The Jeanette Streit Rohatyn '46 Fund is used to grant the "Baudelaire Award" to a Swarthmore student participating in the College Program in Grenoble. The student must be considering a major or a minor in French, and use the award, which is granted on the recommendation of the program director, to travel in metropolitan

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France. Awarded to Hannah Gotwals '13, Adam Rosenberg '13, Elliot Weiser '13 and Declan White '13, Nicole Vanchieri '13.

Judith Polgar Ruchkin Prize Essay is an award for a paper on politics or public policy written during the junior or senior year. The paper may be for a course, a seminar, or an independent project, including a thesis. The paper is nominated by a faculty member and judged by a committee of the Political Science Department to be of outstanding merit based on originality, power of analysis and written exposition, and depth of understanding of goals as well as technique. Awarded to Amalia Feld '12.

The Robert Savage Image Award recognizes outstanding biological images taken by Swarthmore biology students. The award is supported by the Robert Savage Fund which was established by students and colleagues to honor Professor Robert E. Savage, the first professor of Cell Biology at Swarthmore College. Awarded to Erin Kast '15, Erin Lowe '14, Galen Rask '14, Madeleine Booth '15, Elan Silverblatt-Buser '12, and Hyunjo Park '13.

The Frank Solomon Jr. Student Art Purchase Fund permits the Art Department to purchase outstanding student art from the senior major exhibitions. Awarded to Katharine Clark '12, Kathryn Gonzalez '12, Virginia Hottinger '12, Elizabeth Laplace '12, Anastasia Lewis '12, Thomas Soares '12, and Anthony Yoshimura '12.

The Hally Jo Stein Award, endowed in her memory by her brother Craig Edward Stein '78, is given to an outstanding student who the dance faculty believes best exemplifies Hally Jo's dedication to the ideals of dance. It carries a cash stipend. Awarded to Nicole Cox '12.

The Karen Dvornich Steinmetz '76 Memorial Prize, endowed in her memory by many friends and family, is awarded annually to a Swarthmore medical school applicant who demonstrates a special compassion for others. Awarded to Ou Jin '12 and Angelica Saada '10.

The Pan American Award is administered by Latin American Studies. Not awarded this year.

The Peter Gram Swing Prize is awarded by the music faculty to an outstanding student whose plans for graduate study in music indicate special promise and need. The endowment for the prize was established in the name of Ruth Cross Barnard, Class of 1919. Not awarded this year.

The Melvin B. Troy Prize in Music and Dance was established by the family and friends of Melvin B. Troy '48. Each year, it is given by the Music and Dance Department to a student with the best, most insightful paper in music or dance or composition or choreography. This award carries a cash stipend. Awarded to Nicole

Cox '12 (Dance), and Genevieve McGahey '12 (Music).

The Albert Vollmecke Engineering Service Award was established in 1990 in memory of Albert Vollmecke, father of Therese Vollmecke '77. The Vollmecke Prize is awarded for service to the student engineering community. The Engineering Department administers the fund. Awarded to Julian Leland '12 and Marley Spector '12.

The Eugene Weber Memorial Fund was established in honor of the late Eugene Weber, professor of German. The Weber Fund supports study abroad by students of German language and literature. Awarded to Joan O'Bryan '13.

The Jerome H. Wood Memorial Excellence and Leadership Award was created in 1997 in honor of the late Professor Jerry Wood and is awarded annually. Awarded to Leah Guthrie '12 and David Opoku '12.

17.5 Faculty Award

The Flack Faculty Award is given for excellence in teaching and promise in scholarly activity by a member of the Swarthmore faculty to help meet the expenses of a full year of leave devoted to research and self-improvement. This award acknowledges the particularly strong link that exists at Swarthmore between teaching and original scholarly work. The president gives the award based upon the recommendation of the provost and the candidate's academic department. This award is made possible by an endowment established by James M. Flack and Hertha Eisenmenger Flack '38.

17.6 Fellowships

The Stanley Adamson Summer Internship for Research in Chemistry is endowed in memory of Stanley D. Adamson '65 by his parents, June and George Adamson. It provides funding for the summer research of a well-rounded rising student who, in the opinion of the Chemistry and Biochemistry Department, gives great promise of excellence and dedication in the field. Awarded to Elizabeth Williams '13.

The Altman Summer Grant was created by Shingmei Poon Altman '76 in memory of her husband, Jonathan Leigh Altman '74. It is awarded by the Art Department to a junior who has strong interest and potential in studio arts. It provides support for purposeful work in the studio arts during the summer between junior and senior year. Awarded to Kim Soomin '13.

John W. Anderson '50 Memorial Internship was created by his wife, Janet Ball Anderson '51. The Anderson internship supports students teaching science to disadvantaged children, with preference for students interested in

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working with children in grades K-12. Awarded to Kimberly St. Julian '12

In 2005, Bernard Bailyn established *The Lotte Lazarsfeld Bailyn '51 Research Endowment* in honor of his wife, the T. Wilson Professor of Management, emerita, at MIT. The fund supports a student summer research fellowship for a rising junior or senior woman majoring in mathematics, science, or engineering who intends to go into graduate studies in one or more of these fields. Awarded to Eliza Polli '13.

The David Baltimore/Broad Foundation Endowment was established in 2007 by a grant from the Broad Foundation at the request of David Baltimore '60. This fellowship is awarded to a student doing summer research in the natural sciences or engineering with a preference given to a student engaging in mentored off-campus laboratory research and with letters of support from an on-campus faculty mentor. Awarded to Henry Kietzman '14.

The Monroe C. Beardsley Research Fellowship and Internship Fund was established in 2004 to support students in the humanities by providing grants to encourage and facilitate research, original scholarship, and professional development in the areas of art, classics (literature), English literature, modern languages and literature, music and dance, philosophy, religion, and theater. Named after renowned contemporary philosopher Monroe C. Beardsley, a professor of philosophy at Swarthmore for more than 20 years, the fund is administered by the Division of the Humanities and the Provost's Office. Awarded to Thomas Boucher '14, Nicholas Brown '13, Benjamin Kapilow '13, Bradley Lenox '13, and Erica Sands '13.

The Class of 1961 Fund for the Arts and Social Change was established by the Class of 1961 in honor of its 50th Reunion. This fund provides a Summer Social Action Award to one or more students each summer with a preference for projects in which the arts and social change are joined. This reflects the distinctive interests of the Class of 1961 in the art, theater, music and dance of their time and their commitment to making a difference in the world. The recipient(s) will be chosen by the Lang Center for Civic and Social Responsibility. Summer Social Action Awards are granted to students on a competitive basis so that they may spend a summer engaging meaningfully with non-profit organizations, grass-roots advocacy groups, or public service agencies. Not awarded this year.

The Cilento Family Community Service Internship was established in 2002 by Alexander Cilento '71 to support Swarthmore College students who carry out community

service projects that benefit low-income families in the area. The Swarthmore Foundation administers the fund. Awarded to Julia Melin '13.

The Susan P. Cobbs Prize Fellowship is awarded to one or more students to assist them in the study of Latin or Greek or with travel for educational purposes in Italy or Greece. It was made possible by gifts from alumni, managers, faculty members, and friends made in memory of Susan P. Cobbs, who was dean and professor of classics until 1969. Awarded to Emily Caldwell '14.

The Hilde Cohn Student Fellowship Endowment was established in 2007 by Walter H. Clark, Jr. '54 to honor a former faculty member who conveyed to her students her love of the German language and literature. The fund shall be used to support students participating in academic study, internships, and research fellowships in German-speaking countries or in immersive German language programs. It will be administered by the German section of the Modern Languages and Literatures Department. Awarded to Amanda Cardillo '13.

The Joel Dean Fellowships were established in 1982 and are supported by gifts from the Joel Dean Foundation. These fellowships are awarded for summer research in the social sciences. Awarded to Katherine Aronoff '14, Jesse Dashefsky '13, Christopher Geissler '13, Emily Melnick '13, Elowyn Corby '13, Thomas Powers '13 Tran Dinh '13.

The Deborah A. DeMott '70 Student Research and Internship Fund was established by Deborah A. DeMott '70 in 2004. The fund is awarded to students following their second or third years on the recommendation of the Provost's Office in conjunction with an advisory panel of faculty. The recommendation is based on the caliber and potential of the student project proposals. Awarded to Declan White '13.

The Robert Enders Field Biology Award was established by his friends and former students to honor Dr. Robert K. Enders, a member of the College faculty from 1932 to 1970. It is awarded to support the essential costs of both naturalistic and experimental biological studies in a natural environment. The Biology Department gives the field research award annually to Swarthmore students showing great promise in biological field research. Awarded to Benjamin Goloff '15, Abigail Lauder '15, Yana List '14 and Patricia Zarate '14.

The Anne and Alexander Faber International Travel Fund was established by family and friends in honor of Anne Faber and in memory of Alexander L. Faber, parents of three Swarthmore graduates. It provides grants for travel outside the United States and Canada for

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students majoring in the humanities. Awarded to Eli Siegel '13.

The David E. Fisher '79–Arthur S. Gabinet '79 Summer Internship for Biological Sciences and Public Service was established by Andrew H. Schwartz '79 and his wife, Dagmar Schwartz, to honor Andy's friends and classmates, David E. Fisher '79 and Arthur S. Gabinet '79, and supports students working in life sciences or public service who exemplify Fisher's and Gabinet's values, pursuing studies out of love of learning and devotion to the improvement of the human condition. Not awarded this year.

The Hannay Chemistry Fund was established by a gift from the General Signal Corp. in honor of N. Bruce Hannay '42. The fund will provide support for a student's summer research in chemistry. Bruce Hannay was a research chemist with Bell Laboratories and received an honorary doctor of science degree from Swarthmore in 1979. Awarded to Il Kyu Oh '13.

The Hay-Urban Prize in Religion is named in honor of Stephen N. Hay '51 and P. Linwood Urban, professor emeritus of religion. Thanks to a generous gift from Stephen Hay '51, and funds given in honor of Professor Urban's distinguished service as a Religion Department faculty member, the Hay-Urban Prize assists in supporting one student internship, summer study, or research in the area of religion studies. Awarded to Ashley Vogel '13.

The Samuel L. Hayes III Award. Established in 1991 through the generosity of members of Swarthmore Alumni in Finance, the Hayes Award honors the contributions made by Samuel L. Hayes III '57, former member of the Board of Managers and the Jacob Schiff Professor of Business at the Harvard Business School. The Economics Department administers the award, which provides support for student summer research in economics. Awarded to John McMinn '13.

The Hopkins International Public Policy Internship Endowment was established in 2005 to support student travel to Africa, Asia or Europe for an internship dealing with policy issues of global significance, working within a public or non-profit organization. The internship, for any appropriate interval, such as a summer or semester, shall be administered by the Provost's Office and the Public Policy Program. Awarded to Kanayo Onyekwuluje '13.

The William L. Hulanir Summer Research Endowment is awarded each spring by the chairs of the Social Science Division based on the academic interests of a student or students who wish to pursue summer research on global population issues. Not awarded this year.

The Richard M. Hurd '48 Engineering Research Endowment was created in 2000 in memory of distinguished alumnus and former member of the Board of Managers Richard M. Hurd '48. The fund supports students interested in pursuing engineering research during the summer. Awarded to Kyle Knapp '14.

The Janney Fellowship, established through the bequest of Anna Janney DeArmond '32, is named in honor of the donor's grandmother, Anna Canby Smyth Janney, the donor's mother, Emily Janney DeArmond (1904), and the donor's aunt, Mary Janney Cox (1906). It is awarded each year to a woman graduate of the College, preferably a member of the Religious Society of Friends, to assist graduate study in the humanities in this country or elsewhere. This renewable fellowship is awarded annually by the faculty to seniors or graduates of the College for the pursuit of advanced work on the basis of scholarship, character and need. Applications must be submitted by April 20. Awarded to Jessica Bear '09 and Kathryn Speer '08.

The Giles K. '72 and Barbara Guss Kemp Student Fellowship Endowment was established by Giles and Barbara Kemp in 2005 to support student internships and research projects with a preference for students whose fellowship experience will be abroad. Awarded to Ben Goossen '13, Jacqueline Small '13, and Nocolé Vanchieri '13.

Howard G. Kurtz, Jr. and Harriet B. Kurtz Memorial Fund was established to honor their lifelong dedication to ensuring a world at peace through the systematic prevention of war including the use of outer space technologies to assist in the design and implementation of war prevention systems. Awarded to Nimesh Ghimire '15.

The Olga Lamkert Memorial Fund is income from a fund established in 1979 by students of Olga Lamkert, professor of Russian at Swarthmore College from 1949 to 1956. It is available to students with demonstrated financial need who wish to attend a Russian summer school program in this country or summer or semester programs in Russia. Awards based on merit and financial need will be made on the recommendation of the Russian section of the Modern Languages and Literatures Department. Awarded to Erik Myers '15.

The Lande Research Fund was established in 1992 through a gift by S. Theodore Lande to provide support for student research in field biology both on and off campus. Grants are awarded at the direction of the provost and the chair of the Biology Department. Awarded to Michelle Call '13, Shirley Ramirez '14, and Galen Rask '14.

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The Landis Community Service Fund was established in 1991 by James Hormel and other friends of Kendall Landis '48 in support of his 18 years of service to the College. The fund provides grants for students (including graduating seniors) to conduct service and social change projects in the city of Chester. Not awarded this year.

The Eugene M. Lang Summer Initiative Awards are made each spring to 20 students who are selected by the provost in consultation with the appropriate division heads to support faculty-student research, independent student research, and student social service activity specifically related to research objectives and tied to the curriculum, under the supervision of faculty members. Awarded to Nicholas Allred '13, Victoria Barber '13, Taryn Colonnese '13, Alison Devine '13, Sarah Diamond '13, John Dowdy '13, Daniel Duncan '13, Jackson Goodman '13, Andrew Grasberger '15, Harris Hoke '15, Seonhun Jung '15, Margaret Lawlace '14, Emily McAfee '13, Allison McKinnon '13, Maxwell Nesterak '13, Jonghee Quispe '14, Stephen Selverian '13, Yuazhuo Wang '13, Ling Zhong '13, Dina Zingaro '13.

The Genevieve Ching-wen Lee '96 Memorial Fund was established in her memory by family and friends and recognizes the importance of mutual understanding and respect among the growing number of ethnic groups in our society. The fund supports an annual lecture by a prominent scholar of Asian American studies and/or an annual award to two students to assist in projects pertaining to Asian American studies. Not awarded this year.

The Hannah A. Leedom Fellowship was founded by the bequest of Hannah A. Leedom. This award is granted on recommendation of the Committee on Fellowships and Prizes for a proposed program of advanced study that has the approval of the faculty. Applications must be submitted by April 20. Awarded to John Beauregard '05, Reina Chano '09, Jaymes Fairfax-Columbo '10, and Jonathan Miller '12.

The Lenfest Student Fellowship Endowment was established in 2008 by Gerry and Marguerite Lenfest. The fund shall be used to support student participation in research fellowships, internships, and other summer opportunities, and selection will be made by the Provost's Office and the Lang Center for Civic and Social Responsibility. Awarded to Klara Aizupitis '13, Peter Haury '13, Sophie Libkind '14, Brett McLarney '13, Kevin Roberts '14, and Stuart Russell '14.

The Joshua Lippincott Fellowship was founded by Howard W. Lippincott, of the Class of 1875, in memory of his father. This award is granted on recommendation of the Committee on Fellowships and Prizes for a proposed program of advanced study that has the approval of the

faculty. Applications must be submitted by April 20. Awarded to Matthew Bleiman '11, Min Suk Choi '08, Jennifer Wolfe Johnson '12, and Margaret Perry '08.

The John Lockwood Memorial Fellowship was founded by the bequest of Lydia A. Lockwood, New York, in memory of her brother, John Lockwood. It was the wish of the donor that the fellowship be awarded to a member of the Society of Friends. The Lockwood Fellowship is renewable for a second year. This award is granted on recommendation of the Committee on Fellowships and Prizes for a proposed program of advanced study that has the approval of the faculty. Applications must be submitted by April 20. Awarded to Cara Arcuni '09, Samantha Griggs '12, and Jonathan Jaquette '11.

The Joanna Rudge Long '56 Conflict Resolution Endowment was created in 1996 in celebration of the donor's 40th reunion. The stipend is awarded to a student whose meritorious proposal for a summer research project or internship relates to the acquisition of skills by elementary school or younger children for the peaceful resolution of conflict. Awarded to Andrea Jacome '14.

The Julia and Frank L. Lyman '43 Student Summer Research Stipend was created in February 2000. It is awarded each spring by the provost upon receiving recommendations from members of the faculty involved with peace and conflict studies. Awarded to Elliana Bisgaard-Church '13.

The Thomas B. McCabe Jr. and Yvonne Motley McCabe Memorial Fellowship. This fellowship, awarded annually to graduates of the College, provides a grant toward an initial year of study at the Harvard Business School, or at other business schools as follows: the University of Chicago, Massachusetts Institute of Technology, Northwestern University, the University of Pennsylvania, or Stanford University. The McCabe Fellowship is renewable for a second year on the same program. Yvonne and Thomas B. McCabe Jr. lived in Cambridge, Mass., for a time, and he received an M.B.A. from Harvard and was a visiting lecturer there. In selecting the recipient, the Committee on Fellowships and Prizes follows the standards that determine the McCabe Achievement Awards, giving special consideration to applicants who have demonstrated superior qualities of leadership. Young alumni and graduating seniors are eligible to apply. Applications must be submitted by April 20. Awarded to Chirag Chotalia '04, Ann Marie Frassica '09, Darren Johnson '08, Inessa Lurye '06, and Matt Schiller '07.

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The Norman Meinkoth Premedical Research Fund was established in 2004 by Marc E. Weksler '58 and Babette B. Weksler '58 to honor Norman A. Meinkoth's long service as a premedical adviser to students at Swarthmore College, where he was professor of biology for 31 years and chairman of the department for 10 years. The funds are awarded on the basis of scientific merit to a rising junior or senior premedical student to allow the pursuit of laboratory research in the sciences on or off campus. The Provost's Office administers the fund. Awarded to Michelle Ferreira '14.

Mellon Mays Undergraduate Fellowship Program. The Andrew W. Mellon Foundation has provided a grant to establish an undergraduate fellowship program intended to increase the number of minority students, and others, who choose to enroll in doctoral programs and pursue academic careers. The foundation's grant provides term and summer stipends for students to work with faculty mentors as well as a loan-forgiveness component to reduce undergraduate indebtedness for those fellows who pursue graduate study. The fellowships are limited to the humanities, a few of the social sciences, and selected physical sciences. A faculty selection committee invites nominations of sophomores in February and awards the fellowships in consultation with the dean and provost. Awarded to Mame Bonsu '14, Paul Cato '14, Eleanor Pratt '14, Janelle Viera '14, and Patricia Zarate '14.

The James H. '58 and Margaret C. Miller Internship for Environmental Preservation enables a Swarthmore student to engage in meaningful work directed toward the preservation of the environment, including such activities as environmental education, environmental justice, habitat preservation and restoration, issues dealing with environmentally sustainable technologies and economies, and relevant public policy. This may take the form of an internship with an organization which is committed to a sustainable future. The Nature Conservancy, American Farmland Trust, and Natural Resources Defense Council are current examples of organizations engaging in such work. The Award is intended to encourage a student to explore a career in public policy relating to preserving the environment for future generations. The Lang Center for Civic and Social Responsibility selects the internship recipient. Awarded to Rebekah Yang '12.

The Lucretia Mott Fellowship was founded by the Somerville Literary Society and is sustained by the contributions of Swarthmore alumnae. It is awarded each year to a senior woman or alumna who is to pursue advanced study in an institution approved by the committee. Applications must be submitted by April 20.

Awarded to Amalia Feld '12, Liana Katz '10, Sarah Hawkins '11, and Roseanna Sommers '10.

The John W. Nason Community Service Fellowship. The John W. Nason Community Service Fellowship celebrates the contributions of Swarthmore's eighth president by supporting students pursuing off-campus community service related to their academic program. The Nason Fellowship was initiated by members of the Class of 1945 in anticipation of their 50th reunion. The Nason Fellowship is administered by the Swarthmore Foundation. Awarded to Porsche Poole '13.

The Helen F. North Fund in Classics, established in 1996 by Susan Willis Ruff '60 and Charles F.C. Ruff '60 to honor the distinguished career of Helen F. North and her enduring impact on generations of Swarthmore students, is awarded to support the program of the Classics Department. At the discretion of the department, it shall be used to fund annually the Helen F. North Distinguished Lectureship in Classics and, as income permits, for a conference or symposium with visiting scholars; summer study of Greek or Latin or research in classics-related areas by students majoring in the field; or study in Greece or Italy in classics by a graduate of the department. Awarded to Quitterie Gounot '13.

The Arthur S. Obermayer '52 Summer Internship was established in 2005 and is intended to broaden and enrich the experience of a Swarthmore student. The grant shall be awarded with preference to a domestic student who is studying in a major that may not inherently offer an international opportunity. Awarded to Alexander Anderson '13.

The Robert F. Pasternack Research Fellowship was established in 2005 by a gift from the estate of Thomas Koch, deceased husband of Jo W. Koch and father of Michael B. Koch '89. The fellowship honors a beloved member of Swarthmore's Chemistry Department and supports student summer research in chemistry. The fellowship shall be administered by the Provost's Office. Awarded to Lauren Sibeck '14.

The J. Roland Pennock Undergraduate Fellowship in Public Affairs. The fellowship, endowed by friends of Professor J. Roland Pennock at his retirement in 1976 and in recognition of his many years of distinguished teaching of political science at Swarthmore, provides a grant to support a substantial research project (which could include inquiry through responsible participation) in public affairs. The fellowship, for Swarthmore undergraduates, would normally be held off campus during the summer. Preference is given to applicants from the junior class. Awarded to Jessica Adomako '13, Lorand Laskai '13,

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Hannah Lehmann '13, Nancy Mandujano '13, Samantha Panepinto '13, Karim Sariahmed '13, Joshua Satre '13, Aikaterini Stampoiloglou '14, Sam Sussman '13, Julie Warech '13.

The Penrose International Service Fund provides a stipend to support participation in a project to improve the quality of life of a community outside North America. The project should involve direct interaction with the affected community and be of immediate benefit to them rather than action in support of social change at a regional or national level. The stipend will be available to a Swarthmore student from any class for a project in any country other than that of his or her own citizenship. The Lang Center for Civic and Social Responsibility administers the Penrose International Service Fund. Awarded to Arianne Wenk '13.

Phi Beta Kappa Fellowship. The Swarthmore Chapter of Phi Beta Kappa (Epsilon of Pennsylvania) awards a fellowship for graduate study to a senior who has been elected to Phi Beta Kappa and has been admitted to a program of advanced study in some branch of the liberal arts. Awarded to Jessica Bear '09, Candice Nguyen '11, and Maithili Parikh '10.

The Simon Preisler Memorial Endowment was established in 2006 by Richard A. Barasch '75 and Renee Preisler Barasch to honor the memory of Simon Preisler. Mr. Preisler, Renee's father, was an Auschwitz survivor, and with this endowment the Baraschs' wish to create a permanent memorial of the human devastation that occurred during the Holocaust and the lack of adequate global response to the tragedy. The fund supports Ruach at Swarthmore as well as student summer internships and research fellowships in human rights, conflict resolution, and the promotion of peace and understanding. Preference will be given to students pursuing internships and research fellowships related to genocide and other large-scale violent conflicts, projects involving peaceful prevention or intervention, non-violent resistance, or local peacemaking, reconciliation, and healing initiatives. Awarded to Lee Brian '14.

The Project Japan Fund is used to support one student during the summer months to conduct research in Japan on contemporary issues. Awarded to Krystal Brown '15 and Frank Mondelli '14.

The Public Policy Program Internship Funding. The Public Policy Program provides travel (not travel to home area) and living expense support for students who minor in public policy working at an internship that fulfills the program's requirements. Awarded to Matthew Bertuch '14, Marcus Mello '13, Andrea Merritt '13, Meera Oak '12, and Daniel Stuart '13.

The Anwural Quadir Summer Research Fellowship was established in 2005 by Iqbal A. Quadir '81 to honor the memory of his father. This fellowship will enable a Swarthmore student to travel, conduct research, and/or explore and problem solve on issues related to Bangladesh and the student's major. Swarthmore's first fund to support research related to Bangladesh, this award will be determined by the provost, the chair of the interdisciplinary council, and the division chairs from the humanities, social sciences, and natural sciences and engineering. Not awarded this year.

The Sager Fund of Swarthmore College was established in 1988 by alumnus Richard Sager '73, a leader in San Diego's gay community. To combat homophobia and related discrimination, the fund sponsors events that focus on concerns of the lesbian, bisexual, and gay communities and promotes curricular innovation in the field of lesbian and gay studies. The fund also sponsors an annual three-day symposium. The fund is administered by a committee of women and men from the student body, alumni, staff, faculty, and administration. In 2004, Richard Sager created an "internship" to provide funding for students in internships with nonprofit organizations whose primary missions address gay/lesbian/bisexual/transgender issues. The Lang Center for Civic and Social Responsibility administers the internship. Awarded to Luis Penate '13.

The James H. Scheuer Summer Internship in Environmental and Population Studies Endowment was established in 1990. The Scheuer Summer Internship supports student research in environmental and public policy issues. The coordinators of the environmental studies and public policy concentrations select interns in alternate years. Awarded to Paul Shortell '13.

The Somayyah Siddiqi '02 Economics Research Fellowship, for economics research, is funded by T. Paul Schultz '61 in memory of Somayyah Siddiqi '02. Not awarded this year.

The David G. Smith Internship in Health and Social Policy, endowed by alumni, faculty, friends, and former students of David G. Smith, is to support an internship in the social services, with priority for the field of health care, for a Swarthmore undergraduate during the summer or a semester on leave. Awarded to Mina Itabashi '13.

Solodar Family Science and Engineering Summer Research Fund was established in 2006. The fund supports a summer research fellowship for a Swarthmore student of science or engineering, with a preference toward the chemical sciences. Awarded to Madeleine Amodio '14.

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The Starfield Student Research Endowment was established by Barbara Starfield '54 and Phoebe Starfield Leboy '57 in 2004. The fund supports student summer research fellowships in social justice with a preference for students pursuing research in the areas of health services delivery/health policy and social, demographic, and geographic equity. Starfield and Leboy established the fellowships to honor their parents, Martin and Eva Starfield, educators who instilled a love of learning and social justice in their daughters. Awarded to Jalisa Roberts '13, Navin Sabharwal '14, and Anna Stitt '13.

The Surdna Fellowships were established in 1979 by a gift from the Surdna Foundation and are awarded for summer research by Swarthmore students in collaboration with a faculty member in any department in the Natural Sciences and Engineering Division. Awarded to Awjin Ahn '15, Nicholas Felt '13, Nathanael Lo '13, Cassandra Strawser '13, and Samuel Tanner '14.

The Pat Tarble Summer Research Fund was established in 1986 through the generosity of Mrs. Newton E. Tarble. The Tarble Summer Fund supports undergraduate research. The Provost's Office administers the fund. Awarded to Jacob Neely '13.

The Martha E. Tyson Fellowship was founded by the Somerville Literary Society in 1913 and is sustained by the contributions of Swarthmore alumnae. It is awarded each year to a senior woman or alumna who plans to enter elementary or secondary-school work. The recipient of the award is to pursue a course of study in an institution approved by the committee. Applications must be submitted by April 20. Awarded to Aurin Agramonte '12 and Laura Wang '10.

The Hans Wallach Research Fellowship, endowed in 1991 by colleagues and friends, honors the eminent psychologist Hans Wallach (1904–1998), who was a distinguished member of the Swarthmore faculty for more than 60 years. The fellowship supports one outstanding summer research project in psychology for a rising Swarthmore College senior or junior, with preference given to a project leading to a senior thesis. Awarded to Samuel David Hirshman '13.

Albertson joined the Swarthmore faculty in 1927 and served as chairman of the History Department from 1942 until her retirement in 1963. She died in May 1986.

The Janice Robb Anderson '42 Junior Faculty Research Endowment was established by Janice Robb Anderson '42 in 2001. The Anderson endowment supports faculty research, with preference for junior faculty members in the humanities whose research requires study abroad.

The George Becker Faculty Fellowship was endowed by Ramon Posel '50 under a challenge from the National Endowment for the Humanities, in honor of this former member of the English Department and its chairman from 1953 to 1970. The fellowship will provide a semester of leave at full pay for a member of the humanities faculty to do research and write, in the fields of art history, classics, English literature, history, linguistics, modern languages, music, philosophy, or religion but with preference given to members of the Department of English Literature.

The Brand Blanshard Faculty Fellowship is an endowed faculty fellowship in the humanities established in the name of philosopher and former faculty member Brand Blanshard, who taught philosophy at Swarthmore from 1925 to 1944. The fellowship will provide a semester leave at full pay for a member of the humanities faculty to do research and to write. On recommendation of the Selection Committee, a small additional grant may be available for travel and project expenses. Any humanities faculty member eligible for leave may apply. Fellows will prepare a paper about the work of their leave year and present it publicly to the College and wider community. The Blanshard Fellowship is made possible by an anonymous donor who was Blanshard's student at Swarthmore, and a challenge grant from the National Endowment for the Humanities.

The Constance Hungerford Faculty Support Fund was established in 2007 by Eugene M. Lang '38 to recognize Constance Cain Hungerford for her dedicated service as provost and faculty leader and for her outstanding contributions to Swarthmore's educational program. Connie Hungerford, an art historian, joined the Art Department in 1974 and served as provost from 2001 to 2011. This fund allows the provost to make grants to individual faculty members to support their professional responsibilities and scholarly and creative careers.

The Eugene M. Lang Faculty Fellowship is designed to enhance the educational program of Swarthmore College by contributing to faculty development, by promoting original or innovative scholarly achievement of faculty members, and by encouraging the use of such

17.7 Faculty Fellowships and Support

The Mary Albertson Faculty Fellowship was endowed by an anonymous gift from two of her former students, under a challenge grant issued by the National Endowment for the Humanities. It will provide an annual award of a semester's leave at full pay to support research and writing by members of the humanities faculty. Mary

17 Distinctions, Awards, and Fellowships

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achievements to stimulate intellectual exchange among scholars. The fellowship will provide financial support for faculty leaves through a grant of about one-half the recipient's salary during the grant year. On recommendation of the Selection Committee, a small additional grant may be available for travel and project expenses and for library book purchases. The Selection Committee shall consist of the provost, three divisional chairs, and three others selected by the president, of whom at least two must be Swarthmore alumni. Any faculty member eligible for leave may apply. Fellows will be expected to prepare a paper or papers resulting from the work of their leave year, presented publicly for the College and wider community. The Selection Committee may wholly or partially support the cost of publishing any of these papers. These fellowships are made possible by an endowment established by Eugene M. Lang '38.

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The Edmund Allen Professorship of Chemistry was established in 1938 by a trust set up by his daughter Laura Allen, friend of the College and niece of Rachel Hillborn, who served on the Board of Managers from 1887 to 1913.

The Franklin E. and Betty Barr Chair in Economics was established in 1989 as a memorial to Franklin E. Barr Jr. '48 by his wife, Betty Barr.

The Alfred H. and Peggi Bloom Professorship was established in 2002 by Eugene M. Lang '38 in honor of President Alfred H. and Peggi Bloom.

The Albert L. and Edna Pownall Buffington Professorship was established in 1964 by a bequest from Albert Buffington, Class of 1896 in honor of his wife, Edna Pownall Buffington, Class of 1898.

The Dorwin P. Cartwright Professorship in Social Theory and Social Action was created in 1993 by Barbara Weiss Cartwright '37, to honor her husband, Dorwin P. Cartwright '37. The professorship is awarded for a period of five years to a full professor who has contributed to and has the promise of continuing major contributions to the understanding of how social theory can be brought to bear on creating a more humane and ethically responsible society.

Centennial Chairs. Three professorships, unrestricted as to field, were created in 1964 in honor of Swarthmore's centennial from funds raised during the Centennial Fund Campaign.

The Isaac H. Clothier Jr. Professorship of Biology was established by Isaac H. Clothier Jr. as a tribute of gratitude and esteem to Dr. Spencer Trotter, a professor of biology from 1888-1926.

The Isaac H. Clothier Professorship of History and International Relations was created in 1888 by Isaac H. Clothier, a member of the Board of Managers. Originally the professorship was granted in the field of civil and mechanical engineering. Clothier later approved its being a chair in Latin; in 1912, he approved its present designation.

The Morris L. Clothier Professorship of Physics was established in 1905 by Morris L. Clothier, Class of 1890.

The Julien and Virginia Cornell Visiting Professorship was endowed by Julien Cornell '30 and Virginia Stratton Cornell '30, former members of the Board of Managers, to bring professors and lecturers from other nations and cultures for a semester or a year. Since 1962, Cornell professors and their families from every corner of the world have resided on the campus so that they might deepen the perspective of both students and faculty.

The Alexander Griswold Cummins Professorship of English Literature was established in 1911 in honor of Alexander Griswold Cummins, Class of 1889, by Morris L. Clothier, Class of 1890.

The Howard N. and Ada J. Eavenson Professorship in Engineering was established in 1959 by Mrs. Eavenson, whose husband graduated in 1895.

The Neil R. Grabois '57 Professorship was established in 2010 by Eugene M. Lang '38 to honor Neil Grabois, mathematician and educator. This fund supports a professorship in the division of natural sciences and engineering, with a preference for a member of the mathematics department.

The James H. Hammons Professorship was established in 1997 by Jeffrey A. Wolfson '75, to recognize the inspiring academic and personal guidance provided by James H. Hammons, professor of chemistry, who began his distinguished teaching career at Swarthmore in 1964. The professorship may be awarded in any division, with preference given to the Chemistry Department.

The James C. Hormel Professorship in Social Justice, established in 1995 by a gift from James C. Hormel '55, is awarded to a professor in any academic division whose teaching and scholarship stimulate increased concern for and understanding of social justice issues, including those pertaining to sexual orientation.

The Howard M. and Charles F. Jenkins Professorship of Quakerism and Peace Studies was endowed in 1924 by Charles F. Jenkins H'26 and a member of the Board of Managers, on behalf of the family of Howard M. Jenkins, a member of the Board of Managers, to increase the usefulness of the Friends Historical Library and to stimulate interest in American and Colonial history with special reference to Pennsylvania. The fund was added to over the years through the efforts of the Jenkins family and by a 1976 bequest from C. Marshall Taylor, Class of 1904.

The Walter Kemp Professorship in the Natural Sciences was established in 2006 by Giles K. "Gil" '72 and Barbara Guss Kemp. Gil and Barbara wanted to honor Gil's father, a retired psychiatrist, who "has always been an inspiration" and "a great believer in both science and education." The professorship is awarded with particular regard for combining professional engagement with excellence in teaching.

The William R. Kenan Jr. Professorships were established in 1973 by a grant from the William R. Kenan Jr. Charitable Trust to "support and encourage a scholar-teacher whose enthusiasm for learning, commitment to teaching, and sincere personal interest in students will

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enhance the learning process and make an effective contribution to the undergraduate community.”

The Eugene M. Lang Research Professorship, established in 1981 by Eugene M. Lang '38, a member of the Board of Managers, normally rotates every four years among members of the Swarthmore faculty and includes one year devoted entirely to research, study, enrichment, or writing. It carries an annual discretionary grant for research expenses, books, and materials.

The Eugene M. Lang Visiting Professorship, endowed in 1981 by Eugene M. Lang '38, brings to Swarthmore College for a period of one semester to 3 years an outstanding social scientist or other suitably qualified person who has achieved prominence and special recognition in the area of social change.

The Jane Lang Professorship in Music was established by Eugene M. Lang '38, to honor his daughter, Jane Lang '67. The Jane Lang Professorship is awarded to a member of the faculty whose teaching or professional activity promotes the centrality of music in the educational process by linking it to other disciplines.

The Stephen Lang Professorship of Performing Arts was established by Eugene M. Lang '38, to honor his son, Stephen Lang '73. The Stephen Lang Professorship of Performing Arts is awarded for five years to a member of the faculty whose teaching or professional activity promotes excellence in the performing arts at Swarthmore.

The Sara Lawrence Lightfoot Professorship was created by the College in 1992 in recognition of an unrestricted gift by James A. Michener '29. The professorship is named in honor of Sara Lawrence Lightfoot '66, Doctor of Humane Letters, 1989, and a former member of the Board of Managers.

The Susan W. Lippincott Professorship of Modern and Classical Languages was endowed in 1911 through a bequest from Susan W. Lippincott, a member of the Board of Managers, a contribution from her niece, Caroline Lippincott, Class of 1881, and gifts by other family members.

The Edward Hicks Magill Professorship of Mathematics and Natural Sciences was created in 1888 largely by contributions of interested friends of Edward H. Magill, president of the College from 1872 to 1889, and a bequest from John M. George.

The Charles and Harriett Cox McDowell Professorship of Philosophy and Religion was established in 1952 by Harriett Cox McDowell, Class of 1887 and a member of the Board of Managers, in her name and that of her husband, Dr. Charles McDowell, Class of 1877.

The Mari S. Michener Professorship was created by the College in 1992 to honor Mrs. Michener, wife of James A. Michener '29, and in recognition of his unrestricted gift.

The Gil and Frank Mustin Professorship was established by Gilbert B. Mustin '42 and Frank H. Mustin '44 in 1990. It is unrestricted as to field.

The Richter Professorship of Political Science was established in 1962 by a bequest from Max Richter at the suggestion of his friend and attorney, Charles Segal, father of Robert L. Segal '46 and Andrew Segal '50.

The Scheuer Family Chair of Humanities was created in 1987 through the gifts of James H. Scheuer '42; Walter and Marge Pearlman Scheuer '44; and their children, Laura Lee '73, Elizabeth Helen '75, Jeffrey '75, and Susan '78 and joined by a challenge grant from The National Endowment for the Humanities.

The Howard A. Schneiderman '48 Professorship in Biology was established by his wife, Audrey M. Schneiderman, to be awarded to a professor in the Biology Department.

The Claude C. Smith '14 Professorship was established in 1996 by members of the Smith family and friends of Mr. Smith. A graduate of the Class of 1914, Claude Smith was an esteemed lawyer with the firm of Duane, Morris and Heckscher and was active at the College, including serving as chairman of the Board of Managers. This chair is awarded to a member of the Political Science or Economics departments.

The Henry C. and Charlotte Turner Professorship was established in 1998 by the Turner family. Henry C. Turner, Class of 1893 and J. Archer Turner, Class of 1905, served as members of the Board of Managers of Swarthmore College, as officers of the corporation, and as members of various committees. Henry Turner was founder of the Turner Construction Co.; his brother, J. Archer Turner, was the firm's president. Four generations of Turners have had ties with the College, and Sue Thomas Turner '35, wife of Robert C. Turner '36 (son of Henry C. Turner), is a board member emerita. Howard Turner '33, son of J. Archer Turner, has also been very active as a member of the Board of Managers over the years.

The J. Archer and Helen C. Turner Professorship was established in 1998 by the Turner family. Henry C. Turner, Class of 1893 and J. Archer Turner, Class of 1905, served as members of the Board of Managers of Swarthmore College, as officers of the corporation, and as members of various committees. Henry Turner was founder of the Turner Construction Co.; his brother, J. Archer Turner, was the firm's president. Four

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The Henry C. and J. Archer Turner Professorship of Engineering was established with contributions and gifts from members of the Turner family in 1946 in recognition of the devoted service and wise counsel of Henry C. Turner, Class of 1893 and his brother, J. Archer Turner, Class of 1905. Both were members of the Board of Managers.

The Daniel Underhill Professorship of Music was established in 1976 by a bequest from Bertha Underhill to honor her husband, Class of 1894 and a member of the Board of Managers.

The Marian Snyder Ware Director of Physical Education and Athletics was endowed in 1990 by Marian Snyder Ware '38.

The Joseph Wharton Professorship of Political Economy was endowed by a trust given to the College in 1888 by Joseph Wharton, chair of the Board of Managers.

The Isaiah V. Williamson Professorship of Civil and Mechanical Engineering was endowed in 1888 by a gift from Isaiah V. Williamson.

19 Enrollment Statistics

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19.1 Enrollment of Students by Classes (Fall 2011)

	Men	Women	Total
Seniors	182	196	378
Juniors	194	195	389
Sophomores	188	193	381
Freshmen	<u>186</u>	<u>202</u>	<u>388</u>
	750	786	1536
Graduate students	0	0	0
Special student	<u>5</u>	<u>4</u>	<u>9</u>
TOTAL	755	790	1545

Note: These counts include 96 students studying abroad.

19.2 Geographic Distribution of Students (Fall 2011)

Alabama	3	Ohio	27	Indonesia	1
Alaska	3	Oklahoma	1	Italy	1
Arizona	12	Oregon	14	Jamaica	1
Arkansas	4	Pennsylvania	189	Japan	3
California	149	Puerto Rico	1	Jordan	2
Colorado	18	Rhode Island	1	Kenya	1
Connecticut	47	South Carolina	3	Laos	1
Delaware	21	South Dakota	1	Malaysia	1
District of Columbia	13	Tennessee	8	Mexico	1
Florida	23	Texas	46	Myanmar	1
Georgia	17	Utah	7	Nepal	2
Guam	1	Vermont	9	Netherlands	1
Hawaii	2	Virgin Islands	3	New Zealand	1
Idaho	1	Virginia	36	Nigeria	1
Illinois	31	Washington	32	Pakistan	1
Indiana	9	West Virginia	2	Palestine	1
Iowa	5	Wisconsin	5	People's Republic of China ..	19
Kansas	5	Wyoming	2	Peru	1
Kentucky	6	Total United States	<u>1,411</u>	Philippines	1
Louisiana	3			Poland	1
Maine	20			Romania	2
Maryland	87			Singapore	1
Massachusetts	83	Austria	1	South Africa	1
Michigan	19	Brazil	2	South Korea	31
Military PO	2	Brunei	1	Switzerland	1
Minnesota	19	Canada	7	Thailand	1
Mississippi	2	Croatia	1	Trinidad & Tobago	1
Missouri	7	Czech Republic	1	Turkey	1
Montana	4	Ecuador	1	Uganda	1
Nebraska	6	Egypt	2	United Arab Emirates	2
Nevada	3	France	3	United Kingdom	3
New Hampshire	12	Germany	2	Vietnam	2
New Jersey	146	Ghana	5	Zambia	1
New Mexico	6	Greece	1	Zimbabwe	2
New York	200	Guatemala	1	Total from abroad	<u>134</u>
North Carolina	33	Hong Kong	7		
North Dakota	2	India	7	GRAND TOTAL	<u>1,545</u>

20 Course Credit and Numbering System

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The semester course credit is the unit of credit. One semester course credit is normally equivalent to 4 semester hours elsewhere. Upper-class seminars and colloquia are usually given for 2 semester course credits. A few courses are given for 0.5 credit.

Courses are numbered as follows:

001 to 010	Introductory courses
011 to 099	Other courses (Some of these courses are not open to first-year students or sophomores.)
100 to 199	Seminars for upper-class students and graduate students.

The numbers for yearlong courses are joined by a hyphen (e.g., 001–002) and must be continued

for the entire year. For introductory language yearlong courses, credit is not given for the first semester's work only, nor is credit given for the first semester if the student fails the second semester. In cases where credit is not earned for the second half of a yearlong course, the first semester is excluded from counting toward degree credit, although the registration and grade for the first semester remain on the permanent record.

Course listings in this catalog are intended to facilitate planning, but are subject to change. A better guide to course offerings in any particular semester is the schedule of courses available at the Registrar's website www.swarthmore.edu/Admin/registrar/.

Subject Code Key

ARAB	Arabic	HIST	History
ARTH	Art History	INTP	Interpretation Theory
ASIA	Asian Studies	ISLM	Islamic Studies
ASTR	Astronomy	JPNS	Japanese
BIOL	Biology	LASC	Latin American Studies
BLST	Black Studies	LATN	Latin
CHEM	Chemistry and Biochemistry	LING	Linguistics
CHIN	Chinese	LITR	Modern Languages and Literatures
CLAS	Classics	MATH	Mathematics
CLPT	Comparative Literature	MDST	Medieval Studies
CLST	Classical Studies	MUSI	Music
COGS	Cognitive Science	PEAC	Peace and Conflict Studies
CPSC	Computer Science	PHIL	Philosophy
DANC	Dance	PHYS	Physics
ECON	Economics	POLS	Political Science
EDUC	Educational Studies	PPOL	Public Policy
ENGL	English Literature	PSYC	Psychology
ENGR	Engineering	RELG	Religion
ENVS	Environmental Studies	RUSS	Russian
FMST	Film and Media Studies	SOAN	Sociology and Anthropology
FREN	French	SPAN	Spanish
GMST	German	STAT	Statistics
GREK	Greek	STUA	Studio Art
GSST	Gender and Sexuality Studies	THEA	Theater

Footnote Key

1 Absent on leave, fall 2012.	5 Fall 2012.
2 Absent on leave, spring 2013.	6 Spring 2013.
3 Absent on leave, 2012–2013.	7 Affiliated faculty.
4 Absent on administrative leave, 2012–2013.	8 Ex-officio.

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SYDNEY L. CARPENTER, Professor of Studio Art ³
 MICHAEL W. COTHREN, Professor of Art History and Chair
 RANDALL L. EXON, Professor of Studio Art and Studio Art Coordinator
 CONSTANCE CAIN HUNGERFORD, Professor of Art History
 BRIAN A. MEUNIER, Professor of Studio Art
 PATRICIA L. REILLY, Associate Professor of Art History and Associate Provost
 TOMOKO SAKOMURA, Associate Professor of Art History ³
 LOGAN GRIDER, Assistant Professor of Studio Art
 JAKE BECKMAN, Visiting Assistant Professor of Studio Art (part time) ⁶
 JANICE MERENDINO, Visiting Assistant Professor of Studio Art (part time) ⁵
 SERENA PERRONE, Visiting Assistant Professor of Studio Art (part time) ⁵
 MARY PHELAN, Visiting Assistant Professor of Studio Art (part time) ⁶
 RON TARVER, Visiting Assistant Professor of Studio Art (part time)
 MIN KYUNG LEE, Post-doctoral Fellow and Visiting Instructor of Art History
 JUNE V. CIANFRANA, Administrative Assistant

³ Absent on leave, 2012–2013.

⁵ Fall 2012.

⁶ Spring 2013.

The Academic Program

The Art and Art History Department offers two majors: art history and art. The art history major consists of eight credits in art history and one credit in studio art. The art major consists of four credits in art history and seven credits in studio art.

Course Major

Art History

All art history majors, course and honors, are required to take nine credits to fulfill major requirements. Four of these must be the following:

1. One credit in studio art
2. ARTH 002 Western Art (students are encouraged to take this course early in their major program)
3. One course on art outside the western tradition.
4. ARTH 020 Majors Workshop

The remaining five credits will consist of three other art history courses and one 2-credit art history seminar. For those majors considering going on to graduate school in art history it is strongly advisable to choose a series of courses that will provide geographical and historical breadth.

The Comprehensive Requirement

During the senior year, course majors will be given a short list of works of art or architecture drawn from the different geographic areas and historic periods. From this list, students will choose one work to investigate in preparation for writing an essay situating it within its critical interpretive context, addressing broad questions of method and theory as well as the work itself.

Studio Art

All art majors, in both Course and Honors Programs, are required to take 11 courses to fulfill major requirements:

1. Seven credits of studio art:
 - STUA 001 Foundation Drawing, (or, STUA 0018 First-Year Seminar: Making Art)
 - Studio art course in a 2-D medium
 - Studio art course in a 3-D medium
 - One studio art elective
 - Junior Workshop (spring semester of junior year)
 - STUA 030 Senior Workshop 1
 - STUA 040 Senior Workshop 11

2. Four credits of art history, which must include ARTH 002 Western Art.
3. Studio art majors can complete an art history minor as well with the completion of three art history credits in addition to those required by their studio art major.

Notes:

- Five credits in studio art, including the distribution in 2-D, 3-D, and Junior Workshop must be completed before entry to STUA 030 Senior Workshop 1.

The 2-D, 3-D, and advanced credit requirements must be taken at Swarthmore.

- Students are encouraged to consult with professors and advisers about art history selections relevant to their interests.
- The senior art major is required to mount a one-person exhibition in the College gallery representing a culmination in their studio work. This exhibition and accompanying artist statement, of no less than 2500 words, is the comprehensive examination for the art major.

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- Senior exhibitions are scheduled during the last few weeks of the spring semester each year.
- There is no course minor in studio art.

Course Minor

Art History Minor

The course minor in art history will consist of five credits in art history; four of the five credits must be taken at Swarthmore. Studio art majors can complete an art history minor with the completion of four art history credits in addition to those required by their studio art major.

Honors

Honors in Art History

Requirements for admission to the Honors Program do not differ from those for admission to the course major. Once admitted to the honors major, students will be expected to maintain an average of B+ or better in all courses in art history.

Major

1. An honors major in art history requires three two-credit preparations, consisting of three 2-credit seminars. The normal prerequisite for any art history seminar is 2 credits of previous art history course work. Each seminar will be examined in a three-hour written examination and an individual 30-minute oral examination.
2. An honors major in art history must fulfill the requirements for a 9-credit course major including ARTH 020 Majors Workshop.

Minor

An honors minor in art history will take one two-credit seminar, and must have taken at least two other courses in art history. Only one of those credits can be a transfer credit.

Honors in Studio Art

Requirements for admission to the Honors Program do not differ from those for admission to the course major. Students will be expected to maintain an average of B+ or better in all courses in studio art.

Major

1. An honors major in art will present 2 preparations in studio art and 1 preparation in art history.
2. Each of the two studio preparations will consist of two paired studio courses. The examiner of each preparation will receive the syllabus for both courses and slides representing the body of work produced in them and will examine the student in an individual oral examination of 30 minutes.

- a. One preparation pair will consist of STUA 030 Senior Workshop 1 and STUA 040 Senior Workshop 11.
- b. The second pair might consist of an intermediate and an advanced course in a specific medium, or two courses with a different approach to the same medium, (ex: Pottery and Ceramic Sculpture, Drawing and Life Drawing), or, two related courses, (ex: Ceramic Sculpture and Sculpture, Drawing and Works on Paper, Drawing and Painting)

All preparations for honors must be approved in advance by the department.

Notes:

- Studio courses taken at an institution outside of Swarthmore cannot count towards an honors studio preparation.
 - Only courses taught by regularly teaching faculty in studio art can be applied toward a preparation. Courses taught by regularly returning adjuncts might be applied pending department approval.
 - Honors preparations approved in the sophomore year must be adhered to. Changes to the academic program, as they relate to honors preparations, must be approved by the department.
3. The preparation in art history will consist of one 2-credit seminar.
 - a. The prerequisite for any art history seminar is two previous credits in art history, including ARTH 002.
 - b. All majors in art, whether course or honors, must do 4 credits of art history work. Studio faculty may recommend particular art history courses as most relevant to a student's studio interests.
 4. Honors candidates in art must fulfill the course major requirements. The prerequisite for all studio work, unless waived, is STUA 001. The distribution requirements for 2-D and 3-D for the honors major in studio art are the same as those in course.
 5. Honors study in studio art is comprised of a culminating exhibition of the student's studio work, with an accompanying artist essay of 3,750 to 5,000 words. Some of this work may figure in the selections of work presented for one or both of the course pairs described above, but the rationale for inclusion in the exhibition will differ. The artist essay will be sent to both examiners of studio preparations. A revision of a paper written previously for the art history preparation, will be sent to the art history examiner.

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- a. The senior honors study essay will differ from the artist essay written by course students in that it will integrate the preparations in studio and art history.
- b. For honors majors, STUA 040 will count outside the major for purposes of calculating the 20-course rule, since it serves as senior honors study. It will be listed on the transcript not as STUA 040 but as Senior Honors Study.
- c. If a student drops out of Honors after the drop/add period in the last semester, the Senior Honors Study credit will receive a grade of NC. Senior Workshop 11 (STUA 040), assuming it had been successfully completed in the spring, will then be listed on the transcript with the appropriate grade.
- d. Warning: if a student drops out of honors, Senior Workshop 11 no longer counts as outside the major, but as within. A student who has taken 12 other credits within the department, and who is graduating with the minimum of 32 credits will then have 13 in the major and only 19 outside. Honors studio art majors should be especially careful to take enough credits outside the department if they contemplate withdrawing from honors.

Minor

1. An honors minor in studio art will present to the honors examiners one studio preparation consisting of STUA 030 Senior Workshop 1 and STUA 040 Senior Workshop 11.
2. An art minor in studio art must meet the same course requirements as the course major in studio art (see above).
3. During the spring semester of the senior year a minor will write a 2,500 word artist essay to be sent to the examiner, along with the relevant syllabi and slides for the two-credit preparation.

Major Application Process

Requirements for admission to the majors:

Art History

1. Overall average of C or better in all courses taken during the two semesters preceding the time of application.
2. Completion of at least two courses in art history at Swarthmore with grades of B or better. For a double major the grade minimum is also B.

Studio Art

1. Overall average of C or better in all courses taken during the two semesters preceding the time of application. For a double major the overall average must be B.

2. Completion of at least one course in art history and one course in studio art at Swarthmore with grades of B or better.
3. A student may be asked to present a portfolio as evidence of ability to see, describe, and analyze visual phenomena critically.

Art Department Majors and the 20-Course Rule

It is a college requirement that 20 of the 32 credits required for graduation must be outside the major. This means that one can take no more than 12 courses in the major, unless one graduates with more than 32 credits, in which case the surplus can also be in the major.

For **art history majors**, the one required credit of studio art course work counts toward the major, but additional credits of studio art count as outside credits. Thus, an art history major graduating with 32 credits could take no more than three additional art history credits beyond the eight art history credits that are required for the major. But, an art history major could take as many more studio credits as desired.

For Art Majors, the required four credits in art history count within the major, but additional credits in art history count outside the major.

Advanced Placement Credit

Credit for an AP 5 will be given upon completion of an art history course in the department.

Transfer Credit

A maximum of two transfer credits will count toward the major, either from study abroad or other U.S. institutions. Students transferring from another institution should consult with the chair regarding their specific situation.

Off-Campus Study

The Art and Art History Department strongly encourages those with an interest in art and its history to consider incorporating study abroad—either during a summer or a regular academic term—into their Swarthmore program. Important examples of art and architecture are scattered throughout the world, and the encounter with works still imbedded in their original context is vital to an understanding of their historical and contemporary significance. Past experience has shown, however, that art courses in most study abroad programs fall considerably below the academic standards of comparable courses at Swarthmore. Students who are interested in bettering their chances of gaining a full Swarthmore credit for a course taken abroad are advised to meet with either the Studio Art Coordinator and/or the Art History Coordinator, before leaving the campus.

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Note: Study abroad for junior art history majors should take place in the fall of the junior year because the required junior workshop course is in the spring of the junior year.

Art History

ARTH 001C. First-Year Seminar: Making Art History

Are works of art direct extensions, pure reflections, or unique expressions of an individual artist's genius, fragile by implication and susceptible to destruction from overanalysis? Or are works of art (as well as the definition just offered) cultural artifacts produced under specific material and social conditions, and fully meaningful only under extended analysis? Must we choose? And are these questions themselves, and the talk they generate or suppress, yet another manifestation of the Western European and American commodification of art, its production, and its consumption? Such questions will underlie this introduction to the goals, methods, and history of art history. Focusing on works drawn from a variety of cultures and epochs, as well as on the art historical and critical attention those works have attracted, students will learn to describe, analyze, and interpret both images and their interpretations and to convey their own assessments in lucid writing and speaking.

Writing course.

1 credit.

Fall 2012. Cothren.

ARTH 001D. First-Year Seminar: Architecture of Philadelphia

Virtually no other city in the Western hemisphere provides a richer cross-section of architecture over the past 350 years than Philadelphia. The city's material culture tells the story not just of this region but of our nation, from William Penn's utopian New World, to America's 19th-century economic and artistic flowering, to Philadelphia's importance as a mid-twentieth-century crucible of city planning and post-modern design. We will explore the built environment on foot as well as through photography, literature, journalism, and film.

Writing course.

1 credit.

Not offered 2012–2013.

ARTH 001E. First-Year Seminar: Michelangelo and Renaissance Culture

In this discussion-based first-year seminar, we will study the sculptures, paintings, architecture, poetry, drawings, and biographies of the Renaissance artist Michelangelo. We will

investigate these in light of Michelangelo's patrons, audiences, and the larger cultural, political, and religious contexts in which these works were produced. We will also consider the ways in which these works have been analyzed over the centuries and how the biographies and myths of Michelangelo have been created and understood. In doing so, we will develop a critical understanding of the methods and terminology of the discipline of art history itself. Course projects include convening as a mock group of museum trustees to discuss whether the museum should purchase a sculpture that has recently been attributed to Michelangelo.

Writing course.

1 credit.

Not offered 2012–2013. Reilly.

ARTH 001F. First-Year Seminar: Picasso

How should we understand the art of one of the most significant artists of the 20th century? Although long embraced by the history of art, Picasso's art still remains a challenge to its interpreters. This course looks at the sets of questions developed within the discipline of art history to understand this protean artist. Strategies addressed include formal analysis, biography, iconography, semiotics, social history, feminist critique, ethnography, and the history of exhibition and display. Emphasis will be placed on developing critical skills in oral and written formats.

Writing course.

1 credit.

Not offered 2012–2013.

ARTH 001K. First-Year Seminar: Rembrandt and the Dutch Golden Age

Rembrandt van Rijn is considered by many to be the most important artist of the golden age of the Dutch Republic. In this discussion-based course we will study the paintings, prints, drawings, and correspondence of this remarkable artist. Topics will include how Rembrandt's art engaged with the political and social worlds of 17th-century Netherlands and Flanders, as well as how his art addressed religion, gender, and the art market. We will examine, too, how Rembrandt and his works have been analyzed and mythologized over the centuries. Through all of these investigations we will also develop a critical understanding of the methods and terminology of the discipline of art history.

Writing course.

1 credit.

Not offered 2012–2013. Reilly.

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ARTH 001L. First-Year Seminar: From Handscrolls to Comic Books: Pictorial Narratives in Japan

Through examination of select pictorial narratives produced in Japan between the 12th century and the present, this first-year seminar introduces students to the basics of art historical research and analysis. We will look at the ways in which handscrolls, folding screens, and (comic) books employ image and text in addressing subjects such as romances, miracles, battles, and fantasies, and consider the roles and functions performed by pictorial narratives in society.

Writing course.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 001M. First-Year Seminar: Leonardo: Artist, Engineer, Architect, and Anatomist

Leonardo da Vinci was a great anatomist, engineer, architect and inventor whose drawings circulated around the courts of Europe. In this discussion-based course we will study the inventions, writings, paintings, drawings and biographies of this important Renaissance artist. We will consider the ways in which the works, biographies, and myths of Leonardo have been analyzed (and created) over the centuries. In doing so, we will develop a critical understanding of the methods and terminology of the discipline of art history itself.

Writing course.

1 credit.

Fall 2012. Reilly.

ARTH 002. Western Art

This course provides an introduction to Mediterranean and European art from prehistoric cave painting to the 18th century. We will consider a variety of media—from painting, sculpture, and architecture to ceramics, mosaic, metalwork, prints, and earthworks. The goal of this course is to provide a chronology of the major works in the Western tradition and to provide the vocabulary and methodologies necessary to analyze these works of art closely in light of the material, historical, religious, social, and cultural circumstances in which they were produced and received. We will give attention to the use and status of materials; the representation of social relations, gender, religion, and politics; the context in which works of art were used and displayed; and the critical response these works elicited.

1 credit.

Each semester. Cothren.

ARTH 003. Asian Art

This course provides a thematic introduction to the arts of India, China, Korea, and Japan from prehistoric times to the present. Through explorations of select works of calligraphy, painting, prints, ceramics, sculpture, and architecture, this course aims to familiarize students with artistic vocabularies and conventions, sociocultural contexts of production and consumption, and tools of art historical analysis. Particular focus will be given to the interrelationships between art, religion, philosophy, and literature.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 005. Modern Art

This course surveys European and American art from the late 18th century to the 1960s. It introduces significant artists and art movements in their social, political, and theoretical contexts. Attention will also be given to interpretive strategies that have been used to write the history of this art. Issues to be considered include definitions of modernism and modernity, constructions of gender, the rise of urbanism and leisure, the independent art market, and questions of originality and representation.

1 credit.

Spring 2013. Hungerford.

ARTH 012. The Architecture of Frank Lloyd Wright

Frank Lloyd Wright's career straddled two centuries and changed the course of architecture. We will examine his buildings and writings, from the time of his association with Louis Sullivan to the design of the Guggenheim museum and consider Wright's work in relation to the diverse currents of international modernism. Special attention will also be given to his houses and his influence on modern American domestic life.

1 credit.

Not offered 2012–2013.

ARTH 013. Ancient Greek and Roman Art

This chronological survey will begin with a glance at the art of the Aegean and conclude with a study of the art and architecture of late Imperial Rome. We will consider issues such as mythology in daily ritual; the religious, social, and political functions of sculpture; the use of architecture as propaganda; and the invention of the ideal warrior, athlete, and maiden.

Writing course.

1 credit.

Not offered 2012–2013. Reilly.

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ARTH 014. Early Medieval Art and Architecture

In this introduction to European art and architecture from late antiquity to the 12th century, special attention will be given to the "Romanization" of Christian art under Constantine, the Celtic Christian heritage of the British Isles and its culmination in the Book of Kells, Justinianic Constantinople and Ravenna, the Carolingian Renaissance, Romanesque sculpture as ecclesiastical propaganda, and the efflorescence of monastic art under the Cluniacs and Cistercians.

1 credit.

Not offered 2012–2013. Cothren.

ARTH 016. Italian Renaissance Art

This course will provide a rich introduction to the art and architecture produced in Florence, Rome, Venice, Siena, Padua, Mantua, Perugia and other important cultural centers in Italy from the late 14th to the 16th century. In addition to learning about painting, sculpture, drawings, prints, and architecture, we will also study stage design, ice sculptures, temporary festival decorations, banners and costumes. A full range of issues related to the production and reception of artworks will be addressed, including the representation of the individual, the state, and religion. We will also examine art and anatomy, art and gender, the critical responses these works elicited, and the theories of art developed by artists and non-artists alike.

1 credit.

Spring 2013. Reilly.

ARTH 019. Contemporary Art

This course takes a focused look at European and American art from 1945 to the present, a period during which most conventional meanings and methods of art were challenged or rejected. Beginning with the brushstrokes of abstract expressionism and continuing through to the bitmaps of today's digital art, we consider the changing status of artists, artworks, and institutions. Emphasis will be placed on critical understanding of the theoretical and historical foundations for these shifts.

1 credit.

Not offered 2012–2013. Hungerford.

ARTH 020. Majors Workshop

This foundation colloquium for art history majors will explore various approaches to the historical interpretation of the visual arts. Attention will be given to art historiography—both theory and practice—through the critical reading and analysis of some important foundation texts of the discipline as well as more recent writings that propose or challenge a variety of old and new analytic strategies. Central to the course will be the research and

writing of a paper interpreting a work of art or architecture available in the Philadelphia area, an exercise that will help majors develop a clearer sense of the sorts of questions that are central to their own interest in the historical study of visual culture.

Writing course.

1 credit.

Spring 2013. Cothren.

ARTH 021. African–American Art and Identity

This course analyzes constructions of African-American identity as related to visual works of art by and of African Americans, from early colonial America to the present. The course incorporates a variety of social and historical issues, media and disciplines, and students are encouraged to consider art and artists through an interdisciplinary lens. Music, film, and literary sources will be presented in lecture. There is a special focus on art and artists from the Philadelphia area.

1 credit.

Not offered 2012–2013.

ARTH 025. Native American Art

An overview of the arts of native peoples across the North American continent from the archaeological records of prehistory to the contemporary creations of painters and sculptors working within an international "art world." Attention will be given to the theoretical, political, and methodological challenges inherent in the study of these indigenous arts and their interactions with other cultures and cultural viewpoints, past and present. Discussions will focus on issues of identity and ritual, artists and their audiences, archaeology and recovery, colonization and tourism.

1 credit.

Not offered 2012–2013. Cothren.

ARTH 032. Crafting Nature: The Arts of Japanese Tea Culture

This course explores the rich cultural practice of *chanoyu*, the "Japanese tea ceremony," which emerged around the preparation of powdered green tea. We will examine the ritual, aesthetic, and institutional history of this practice from the 12th century to the present and consider the various cultural forms—painting, calligraphy, ceramics, architecture, garden design, religious ritual, performance, food preparation, and flower arrangement—that were integrated into and developed through *chanoyu*. Discussions will include the place of Zen Buddhism in the history of *chanoyu*, the role of *chanoyu* in Japanese aesthetic discourse and art collecting practices, and the impact of *chanoyu* on contemporary productions of

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architecture, lacquerware, metalware, and ceramics. We will learn the formal procedures of preparing tea (*temae*) and visit Shofuso, the Japanese House and Garden in Fairmount Park, Philadelphia.

Writing course.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 033. Famous Places and Sacred Sites: The Art of Landscape in East Asia

This course surveys the major traditions of landscape art in East Asia. We will explore the ways in which places and spaces are transformed into famous places and sacred sites and consider the critical role played by visual representation in this process. Major topics include the relationship between landscape and power, cultural memory, literature, mythology, seasonality, travel, and literati culture. We will examine the functions of landscape art in various cultural, geographical, and temporal contexts of East Asia and consider the complex processes of cultural dissemination and adaptation by looking at the reception of Chinese landscape painting tradition in Korea and Japan.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 034. East Asian Calligraphy

This course surveys the major calligraphic traditions of China, Korea, and Japan from 1200 B.C.E. to the present. In addition to analyzing the development and dissemination of calligraphic styles and the works of individual calligraphers, we will explore how calligraphy conveys meaning, how the history of calligraphy has been written, and how calligraphy has been used as a powerful tool for cultural and political commentary.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 039. Contemporary Japanese Visual Culture

This course aims to familiarize students with the visual culture of contemporary Japan and its complex relationship to the traditional arts of Japan as well as to Western culture. Topics examined will include representations of gender, nature, tradition, history, nation, city and suburbia, tourism, food, commodity, and fashion. We will closely analyze and critique works in the print medium such as advertisements, graphic design, photography, magazines, and *manga*. We will also discuss examples and trends in Japanese product design

and character design that have achieved global recognition, such as MUJI and Hello Kitty.

1 credit.

Not offered 2012–2013. Sakomura.

ARTH 045. Gothic

This course will examine the formation of “The Gothic” around 1140 and its development and codification in the Ile-de-France to the middle of the 13th century; monasteries, cathedrals, and chapels; neo-platonism and the new aesthetic; “court-style” and political ideology; structural technology and stylistic change; patronage and production; contextualizing liturgy and visualizing dogma.

1 credit.

Not offered 2012–2013. Cothren.

ARTH 050. Caravaggio, Rubens and Rembrandt

This course will examine the work of the great masters of Baroque art, Caravaggio, Rubens and Rembrandt and the diverse social, political and cultural worlds of Rome, Antwerp/Brussels and Amsterdam, where these three artists worked. A full range of issues related to the production and reception of their artworks will be addressed, including the representation of the individual, the state, and religion, and the construction of artistic identity. We will also examine art and anatomy, art and gender, the critical responses these works elicited, and the theories of art developed by artists and nonartists alike. Special attention will be paid to Rembrandt as a printmaker and draftsman.

1 credit.

Not offered 2012–2013. Reilly.

ARTH 051. Renaissance Art in Florence and Environs

An introduction to painting, sculpture, drawings, prints, and architecture produced in Florence and its environs from the late 14th to the 16th century. We will consider a full range of issues related to the production and reception of these works, including the representation of individuals, the state, and religion. We will also examine the context in which these works were used and displayed, art anatomy, art and gender, the critical responses these works elicited, and the theories of art developed by artists and non-artists alike.

1 credit.

Not offered 2012–2013. Reilly.

ARTH 065. Modern Architecture

This course traces the development of modern architecture and the built environment from the Industrial Revolution in Europe to the global present with an emphasis on the critical debates that informed its production, practice and reception. We will study architecture as a social

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process and formal practice through a variety of methodologies. Important themes include, technology and materials, form and function, the identity of the architect, public and private space, housing and domesticity, monuments and informality, colonization and globalization. Field visits will be an important element to the class.

1 credit.

Fall 2012. Lee.

ARTH 068. Contemporary Architecture: Practice and Theory

This course serves as a laboratory for studying architectural theory and history from the 1960s to the present in order to prepare and submit a proposal for an actual architectural competition. Over the course of the semester, students will act as a team to develop ideas and execute them into a representation depending on the requirements of the chosen program.

Prerequisite: ARTH 065, STUA 001, or consent of instructor.

1 credit.

Spring 2013. Lee.

ARTH 069. Urbanism in 19th-century Europe and the Americas

This course examines the emergence of the modern city during nineteenth-century industrialization in Europe and the Americas. It seeks to study the structural and cultural conditions of modern urbanization in the built environment, considering as fundamental how that experience was mediated by visual representations and architecture. Each week considers a different city—Paris, London, Manchester, Chicago, New York, Shanghai, Vienna, Rio de Janeiro, and Barcelona—whose social spaces of modernity are discussed in comparison to each other. We will draw from scholarship in architectural history, art history, urban history and sociology, and critical theory. As a writing course, students will be asked to synthesize visual analysis with historical research in their papers, and they will develop skills in conceiving and evaluating visual and formal evidence that is specific to the discipline of art and architectural history, as well as urbanism and history of the built environment. Writing course.

1 credit.

Fall 2012. Lee.

ARTH 071. Global History of Architecture

This course provides an introduction to the fundamental elements of architectural forms, materials, and effects within a global framework. Following a broad historical line from prehistory to the mid-twentieth century,

this introduction aims not only to acquaint students with architectural monuments around the world, but also to consider how a particular monument is constructed and defined in its production, use and reception. Students will develop a vocabulary and literacy of architecture and its representations, as well as a general grasp of the different methodologies used to analyze space and three-dimensional structures.

1 credit.

Not offered 2012–2013.

ARTH 074. Studies in the History of Photography

This course will consider the theoretical implications of the invention of photography by taking a focused look at select moments in the history of this medium. What is meant by “the photographic?” And how have practitioners of photography asserted and/or challenged such a concept? Essays by Walter Benjamin, Roland Barthes, Susan Sontag, Rosalind Krauss, Martha Rosler, and others will form a foundation for discussions about specific artists, movements, and techniques. The class is organized around group discussions and is driven by student contributions.

1 credit.

Not offered 2012–2013. Hungerford.

ARTH 096. Directed Reading

1 credit.

Staff.

ARTH 180. Thesis

A 2-credit thesis normally carried out in the fall of the senior year. The topic must be submitted and approved by the instructor in charge before the end of the junior year.

2 credits.

Staff.

Seminars

Unless otherwise noted, the prerequisite for all seminars is two courses in art history.

ARTH 136. Word and Image in Japanese Art

This seminar explores the dialogue between text and image as manifested in visual representations of courtly culture in Japan from the 10th to the 18th century. Through select works of courtly narrative and poetry, such as the 11th-century classic *The Tale of Genji*, we will examine the complex and nuanced interactions of text, image, calligraphy, object, function, patronage, production, and consumption as shaped by the materiality of a range of media including handscrolls, folding screens, poem sheets, illustrated and printed books, lacquerware, textiles, and fans.

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2 credits.

Not offered 2012–2013. Sakomura.

ARTH 147. Visual Narrative in Medieval Art

This seminar examines how and why tendentious stories are told in pictures during the European Middle Ages and the various ways art historians have sought to interpret their design and function. After introductory discussions on narratology, the class focuses on an intensive study of a few important and complex works of art that differ in date of production, geographic location, viewing context, artistic tradition, and medium. In past years, these have included the Bayeux Embroidery of ca. 1070, the stained-glass windows of the Parisian Sainte-Chapelle of ca. 1245, and Giotto's frescos in the Arena Chapel in Padua of 1303–1305.

2 credits.

Spring 2013. Cothren.

ARTH 151. The Visual Culture of Renaissance Rome

From the 14th to the 17th century, Rome was transformed from a “dilapidated and deserted” medieval town to a center of spiritual and worldly power. This seminar will consider the defining role that images played in that transformation. In addition to studying the painting, sculpture and architecture of artists such as Fra Angelico, Bramante, Raphael, and Michelangelo, we will study the creation and use of objects such as banners, furniture, and temporary festival decorations. Topics will include papal reconstruction of the urban landscape; the rebirth of classical culture, art and the liturgy, private devotion and public ritual, and the construction of the artist as genius.

2 credits.

Not offered 2012–2013. Reilly.

ARTH 164. Modern Art

Current discussions from multiple theoretical perspectives of artists such as Courbet, Manet, Degas, Gauguin, Cezanne, Picasso, and Pollock and the issue of “modernism” in 19th- and 20th-century painting.

2 credits.

Fall 2012. Hungerford.

Studio Arts

STUA 001. Foundation Drawing

This course is designed as an introduction to drawing as the basis for visual thinking and perception. The class will focus on concepts and practices surrounding the use of drawing as a visual language rather than as a preliminary or planning process. Whether students are

interested in photography, painting, pottery, sculpture, installation or performance, the ability to design and compose visually is fundamental to their development. The course follows a sequence of studies that introduces students to basic drawing media and compositional elements while they also learn to see inventively.

This course is a prerequisite for all other courses in studio art unless waived by the instructor.

1 credit.

Each semester. Staff.

STUA 001B. First-Year Seminar: Making Art

This studio art experience is designed for first-year artists in all media who have demonstrated through a portfolio presentation their knowledge of the elements of visual thinking, design, and composition. This course is similar in content to the foundation drawing class STUA 001. However, it will be more in depth, with more emphasis on individually designed studio and research projects. Portfolios of actual or photographed work must be submitted for evaluation during orientation week. Contact the department for details.

1 credit.

Fall 2012. Exon.

STUA 005. Color Photography

This class is an introduction to the art and craft of color photography using the tools that are most widely practiced by artists today. Students work toward a final project using either a film or digital camera, processing images in Photoshop and outputting them on a professional-grade ink-jet printer. Weekly critiques, photographer research projects, and at least one field trip to look at art make up the class. It is preferred, but not required, that students take STUA 006: Black and White Photography first.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Spring 2013. Tarver.

STUA 006. Black and White Photography

This class introduces students to the traditional craft of silver wet dark-room photography. Though black-and-white images can be created digitally, enough visual and technical complexity remains in silver gelatin printing that many artists continue to work in this time-honored medium long after the “digital revolution.” Students use film cameras, film, and light-sensitive paper to create a final body of work. Weekly critiques, photographer

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research projects, and at least one field trip to look at art make up the class.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Fall 2012. Tarver.

STUA 007. Book Arts

Introduction to the art of the book. Included will be an investigation into typesetting and printing, binding, wood engraving, and alternative forms of book construction and design.

1 credit.

Spring 2013. Phelan.

STUA 008. Oil Painting

Students will investigate the pictorial structure of oil painting and the complex nature of color. A thorough study of texture, spacial conventions, light, and atmosphere will be included.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Spring 2013. Staff.

STUA 009. Life Sculpture

Working from the perceptual observation and study of life forms, we will explore the sculptural principles and practice of life modeling in clay. Students will explore this subject in a broad range of historical styles—from the study of human anatomy to the more contemporary use of various life forms as source material towards abstraction. The earlier projects are centered on the study of the human figure through self-portraiture. The later projects will encourage the explorations of other life forms—plants and animals. Two trips to local museums are scheduled as an integral part of the projects.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Spring 2013. Meunier.

STUA 010. Life Drawing

Work in various media directed toward a clearer perception of the human form. The class is centered on drawing from the model and within this context. The elements of gesture, line, structure, and light are isolated for the purpose of study.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Fall 2012. Grider.

STUA 011. Watercolor

This course is a complete exploration of water-soluble media with an emphasis on transparent, gum arabic-based watercolor. Other materials and techniques will include ink wash, gouache, silk colors, collage, handmade papers, matting, and pen making, using reeds and quills. When in the studio, the class will work from the figure and still life. The central motif, however, will be painting the landscape. Whenever possible, we shall work outdoors. Occasional field trips to locales other than the campus will be offered.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Not offered 2012–2013.

STUA 012. Figure Painting and Composition

In this advanced course in painting and drawing the human form, emphasis will be given to the methods, thematic concepts, conventions, and techniques associated with multiple figure design and composition.

Prerequisite: STUA 008 and/or STUA 010.

1 credit.

Spring 2013. Staff.

STUA 013. Sculpting Everyday Things

Covering a broad range of contemporary sculptural concepts and techniques as they apply to the making of the most common of functional objects—chairs, tables, lamps, and bowls. After study and drawing from trips to area museums, students will design a thematically related series of three functional forms, with the use of found objects as a starting point. Several different mediums may be explored, including clay and epoxy modeling, plaster casting, woodworking, fabric work, and assemblage.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Not offered 2012–2013. Meunier.

STUA 014. Landscape Painting

This course explores the vast array of interpretive approaches, and practical methods available to the artist interested in landscape painting. Each student will be introduced to methods and techniques that will be used in the field while painting directly from nature. Topics include atmospheric perspective, linear perspective, viewpoint, compositional structuring through shape and rhythm, and a thorough study of light through changing effects of color and tonality. Excursions into the urban, suburban, and rural landscape of southeastern Pennsylvania will be scheduled

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weekly. Oil paints will be the central medium of the class.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Fall 2012. Exon.

STUA 015. The Potter's Wheel

This class focuses on a series of projects for the wheel to assist in developing proficiency, technique and ideas for both functional and sculptural form. Critiques and in class discussion are an important component of this experience. Students will be exposed to traditional and nontraditional solutions to the wheel thrown container through slide lectures, videos and guest artists. For beginners and experienced students.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Fall 2012. Merendino.

STUA 016. Projects for the Potter's Wheel

Projects for the Potter's Wheel is an upper level course for students interested in developing their experience on the potter's wheel. Projects will challenge the student both technically and conceptually. The objective is to build vision as well as skill through technically specific and theme based projects. The goal is to identify a direction and pursue it as a focused body of work for the entire semester. Gallery visits, slide lectures, a guest artist and demonstrations will supplement this experience.

Prerequisite of one semester of Potter's Wheel or comparable experience required.

1 credit.

Not offered 2012–2013. Carpenter.

STUA 017. The Container as Architecture

This class focuses on designing and constructing container-based forms using clay as the primary medium. Using hand-building processes including slab, coil and cast forms students will develop architecturally imagined forms. Thematically conceived projects will allow students to explore problems in three-dimensional design using a broad range of architectural references. The experience will be complimented with slide presentations, demonstrations and guest artists.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Spring 2013. Beckman.

STUA 018. Printmaking

This class will focus on intaglio and relief processes, and provide a general overview of tools, techniques, terminology, paper and plate preparation, and safety. Using historical and contemporary examples, students will be introduced to the differing ways printmaking can be employed in the creation of contemporary art. The techniques and functions of seriality and the multiple, including how to properly handle paper and edition a print will also be introduced. The final project of the semester will include an exchange edition. Class time will be divided between work time, demonstrations, digital presentations, and field trips.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Fall 2012. Perrone.

STUA 020. Advanced Studies

020A. Ceramics

020B. Drawing

020C. Painting

020D. Photography

020E. Sculpture

020F. Printmaking

020G. Architectural Drawing

These courses are designed to usher the intermediate and advanced student into a more independent, intensive study in one or more of the fields listed earlier. A discussion of formal issues generated at previous levels will continue, with greater critical analysis brought to bear on stylistic and thematic direction. All students are expected to attend, throughout the semester, a given class in their chosen medium and must make sure at the time of registration that the two class sessions will fit into their schedules. In addition to class time, students will meet with the professor for individual conferences and critiques.

This series of courses also serves as the Junior Workshop, a colloquium for junior studio art majors in the spring semester. Students will produce work within the classes offered as Advanced Studies. Regularly scheduled group and individual critiques with other junior majors and a faculty coordinator will occur throughout the semester, culminating in a group exhibition.

Note: Although this course is for full credit, a student may petition the studio faculty for a 0.5-credit semester.

Prerequisites: STUA 001 and at least one previous course in the chosen medium.

1 credit.

Each semester. Staff.

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STUA 021. Turning Corners, Drawing Architecture

The Beaux-Arts practice of “analytique”—a drawn, or sketched, tour of a building’s unifying visual elements, proportional relationships, and structural details—will be the primary mode of inquiry in this course. Taking advantage of the great number of the fine examples of historical and contemporary architecture in this region, the class will take a series of field trips to a select group of local monuments to gather visual material. We will continue and build on the student’s competency and understanding of linear perspective and free hand sketching, established in the prerequisite, while introducing new methods in site measuring and isometric drawing. Extensive use of watercolor and gouache will also be used, although previous experience in these techniques is not required, in order to articulate the decorative and light specific qualities of each building, and its surroundings.

Prerequisite: STUA 001 or consent from instructor.

1 credit.

Spring 2013. Staff.

STUA 022. Color

Color functions in many ways in painting. The interaction of color may be used to create the illusion of light and space or to establish an expressive tone. Color can also operate on a symbolic level or be used to create a compositional structure. Using various drawing and painting media students will explore the ways which color can be manipulated. Assigned readings, critiques and group discussions will be included.

Prerequisite: STUA 001 or consent of instructor.

1 credit.

Spring 2013. Grider.

STUA 024. Painting Materials and Methods

This course is designed to give a broad practical introduction to various painting media, tools, and techniques. An abbreviated history of each medium, significant changes to the process and practice, as well as specific tools and applicable techniques will be covered. The course will cover egg tempera, encaustic, distemper, oil, watercolor, gouache, and acrylic, from the raw materials to the final usable medium. Each medium will be addressed through an assigned project. Readings, critiques and group discussions will be included to provide further art historical context and concrete examples of materials issues confronted in class.

1 credit.

Not offered 2012–2013. Grider.

STUA 025. Advanced Studies II

Continuation of STUA 020 on a more advanced level. This series of courses also serves as the Junior Workshop, a colloquium for junior studio art majors in the spring semester. Students will produce work within the classes offered as Advanced Studies. Regularly scheduled group and individual critiques with other junior majors and a faculty coordinator will occur throughout the semester, culminating in a group exhibition.

025A. Ceramics

025B. Drawing

025C. Painting

025D. Photography

025E. Sculpture

025F. Printmaking

Prerequisite: STUA 020.

1 credit.

Each semester. Staff.

STUA 029. Junior Workshop

During the spring semester of the junior year and in preparation for the Senior Workshop I and II, studio art majors are required to take Junior Workshop as their advanced study. Non-majoring advanced study students are also class participants. Working with a faculty coordinator, students will develop works with an emphasis on improving technically, conceptually and productively. Guest artists, studio visits and critiques will be integral to the workshop experience. Finally, works produced during the workshop will be exhibited in a group exhibition at the end of the semester. Because this required workshop takes place in the spring, it is recommended that off-campus study occur during the fall semester.

1 credit.

Spring 2013. Grider.

STUA 030. Senior Workshop I

This course is designed to strengthen critical, theoretical, and practical skills on an advanced level. Critiques by the resident faculty members and visiting artists as well as group critiques with all members of the workshop will guide and assess the development of the students’ individual directed practice in a chosen field. Assigned readings and scheduled discussions will initiate the writing of the thesis for the senior exhibition.

This course is required of senior art majors.

1 credit.

Fall 2012. Meunier.

STUA 040. Senior Workshop II

This course is designed to further strengthen critical, theoretical, and practical skills on a more advanced level. During the spring

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semester of the senior art major, students will write their senior artist statement and mount an exhibition in the List Gallery of the Eugene M. and Theresa Lang Performing Arts Center. The artist statement is a discussion of the development of the work to be exhibited. The exhibition represents the comprehensive examination for the studio art major. Gallery exhibitions are reserved for studio art majors who have passed the senior workshop and fulfilled all requirements, including the writing of the senior art major statement.

1 credit.

Spring 2013. Meunier.

Asian Studies

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Chair: WILLIAM GARDNER (Modern Languages and Literatures, Japanese)
Anna Everetts (Administrative Assistant)

Faculty: Alan Berkowitz (Modern Languages and Literatures, Chinese)¹
Pallabi Chakravorty (Music and Dance)
K. David Harrison (Linguistics)
Steven P. Hopkins (Religion)
Haili Kong (Modern Languages and Literatures, Chinese)
Gerald Levinson (Music)
Bakirathi Mani (English Literature)
Tomoko Sakomura (Art History)³
Tyrene White (Political Science)
Thomas Whitman (Music)
Lala Zuo (Modern Languages and Literatures, Chinese)

¹ Absent on leave, fall 2012.

³ Absent on leave, 2012–2013.

Asian studies is an interdisciplinary program that introduces students to the history, cultures, and societies of Asia—including principally China, Japan, and India. Courses are offered in the departments of art, economics, English literature, history, linguistics, modern languages and literatures (Chinese and Japanese), music and dance, political science, religion, sociology and anthropology, and theater.

As the largest interdisciplinary program at the College, Asian studies plays a significant role in many departments in the humanities and social sciences. Some students choose a major or a minor in Asian studies; many others study about Asia while majoring in political science, economics, history, religion, anthropology, languages and literatures, or other fields.

Studying Asia and gaining experience in the Asian world are important to understanding the global flows of peoples, cultures, technology, and business in today's world. Many students explore traditional art, literature, or religion, or perhaps politics (World War II or the Cold War). Others are attracted by broad spiritual practices (Zen meditation, for example), or economic issues (rural poverty or global business). Today—as the Asian American community expands and diversifies, and as Asian cultural and technological influences have become part of American life—learning about Asia is not so exclusively about the “other,” but often about “self.” To study Asia, then, is to trace the diverse strands of Asian cultures that have originated in different regional, national, and local traditions, but which have now become increasingly intertwined with contemporary global life.

The Academic Program

The Asian Studies Program offers a major and a minor in course and honors. Students who declare a major in Asian studies construct

individualized programs of study, with a focus on a comparative theme or on a particular country or region. Some examples of comparative themes are classical traditions in Asian literature and art, Buddhist studies, Asian nationalisms and the emergence of nation-states, and the political economy of Asian development. In all cases, the core of the major involves exposure to multiple regions and multiple disciplines.

Students interested in Asian studies are urged to consult the Asian studies website for up-to-date information on courses and campus events. Students should meet with the program chair in advance of preparing a Sophomore Plan. Advance planning is especially important for students contemplating the Honors Program and those planning to study abroad.

Course Major

Asian studies invites students to make connections among courses that differ widely in content and method. When considering applicants to the major, the Asian Studies Committee looks for evidence of intellectual flexibility and independence. Students must have completed at least two Asia-related courses in different departments with grades of B or better to be accepted into the major.

The major in Asian studies consists of a minimum of ten (10) credits, with requirements and distribution as follows:

Geographic breadth. Coursework must include more than one of the regions of Asia (East, South, Northeast, and Southeast). This requirement can be fulfilled by taking at least two courses that are pan-Asian or comparative in scope or by taking at least one course on a country that is not the principal focus of a student's program.

Disciplinary breadth. Courses must be taken in at least three different departments.

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Core courses. At least one of the following courses must be taken:

- ARTH 003. Asian Art
- CHIN 016. Substance, Shadow, and Spirit in Chinese Literature and Culture
- CHIN 023. Modern Chinese Literature
- JPNS 017. Introduction to Japanese Culture: The Cosmology of Japanese Drama
- POLS 055. China and the World
- RELG 008. Patterns of Asian Religions
- RELG 009. The Buddhist Tradition
- RELG 012 or 013. History, Religion, and Culture of India I or II

Intermediate and advanced work. A minimum of 5 credits must be completed at the intermediate or advanced level in at least two departments.

Asia language study. Asian language study is not required but is strongly recommended. Up to 4 credits of language study may be applied toward the major. For languages offered at Swarthmore (Chinese and Japanese), courses above the first-year level may count toward the major. For Asian languages not offered at Swarthmore, courses at the entry level may count toward the major if at least the equivalent of 1.5 credits is earned in an approved program.

Thesis / Culminating Exercise

Students in the Asian studies course major have a choice of culminating exercises.

Thesis option. A 1- or 2-credit thesis, followed by an oral examination. A thesis must be supervised by a member of the Asian studies faculty. Students normally enroll for the thesis (ASIA 096) in the fall semester of the senior year.

Qualifying papers option. Students revise and expand two papers they have written for Asian studies courses in consultation with Asian studies faculty members.

Honors seminar option. Students take a 2-credit honors seminar in an Asian studies topic in either their junior or senior year. (Note: A two-course combination or a course plus attachment will not satisfy this requirement.)

Grade-point average requirement

A student must have at least a C average in the course major.

Course Minor

Students will be admitted to the minor after having completed at least two Asian studies courses in different departments with grades of B or better. The Asian studies minor in course consists of five courses, distributed as follows:

Geographic breadth. Coursework must cover more than one region of Asia. This can be

accomplished by taking at least two courses that are pan-Asian or comparative in scope or by taking at least one full course on a country that is not the principal focus of a student's program.

Disciplinary breadth. Asia-related courses must be taken in at least two departments outside of the disciplinary major. Only one course may overlap the Asian studies minor and the disciplinary major.

Core courses. Students are required to include at least one course from the list of core courses (see above).

Intermediate or advanced work. At least 2 credits of work must be completed at the intermediate or advanced level.

Asian language study. Asian-language study is not required, but courses in Asian languages may count toward the course minor. For languages offered at Swarthmore (Chinese and Japanese), courses above the first-year level may count toward the minor. For Asian languages not offered at Swarthmore, courses at the entry level may count toward the minor if at least the equivalent of 1.5 credits is earned in an approved program.

Grade-point average requirement. A student must have at least a C average in the minor.

Honors Major

To be admitted to the honors major, students should have completed at least two Asian studies courses in different departments with grades of B+ or better.

The honors major in Asian studies consists of a minimum of ten (10) credits (including four honors preparations). The four preparations in an Honors Program must be drawn from at least two different disciplines.

1. Geographic and disciplinary breadth requirements. These are the same as those for the course major (see above).

2. Core courses. Students are required to include at least one course from the list of core courses (see above).

3. Asian studies as an interdisciplinary major. All four fields for external examination must be Asian studies subjects. One of the fields may also count toward an honors minor in a department. The four preparations must be drawn from at least two different disciplines.

4. Grade-point average requirement. A student must earn at least a B+ in all offerings applied to the honors major.

Honors Minor

To be admitted to the honors minor, students should have completed at least two Asian

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studies courses in different departments with a grade of B+ or above.

An honors minor in Asian studies consists of a minimum of 5 credits, distributed as follows:

1. Geographic breadth. There are two tracks within the minor:

a. Comparative Asian cultures—The selection of courses and the honors preparation should offer a comparative perspective on the traditional or modern cultures of Asia. Individual programs should be worked out in close consultation with the Asian studies coordinator. (Language study does not count toward this track.)

b. Focus on a single country or region—All courses in the program should focus on the same region or country. One or 2 credits of language study may be included.

2. Disciplinary breadth. Asia-related courses must be taken in at least two departments outside of the disciplinary honors major. Only one course may overlap the honors minor and the disciplinary honors major.

3. Core courses in the cultural traditions of Asia. Normally at least one of the five courses should be a core course.

4. Asian language study. Asian language study is not required, but courses in Asian languages may count toward the honors minor. For languages offered at Swarthmore (Chinese and Japanese), courses above the second-year level count toward the minor. For Asian languages not offered at Swarthmore, courses at the entry level may be counted if the equivalent of 1.5 credits is earned in an approved program.

5. Honors preparation. One preparation, normally a two-credit seminar, will be submitted for external examination.

6. Senior Honors Seminar for minors. The student will fulfill the requirements set for honors minors by the department offering the honors preparation.

7. Grade-point average requirement. A student must have at least a B+ in all courses applied to the honors minor.

Language Study

Swarthmore currently offers Chinese and Japanese language courses; other Asian languages may be studied at the University of Pennsylvania during the regular academic year, in summer-language programs, or abroad. For languages offered at Swarthmore, courses above the first-year level count toward the major. For Asian languages not offered at Swarthmore, courses at the entry level may be approved if at least the equivalent of 1.5 credits is successfully completed in a program approved by the Asian Studies Committee.

Fellowship and Grant Opportunities for Students

The Alice L. Crossley Prize in Asian Studies is awarded annually to the student or students who submit the best essay(s) on any topic in Asian or Asian American Studies.

The Genevieve Ching-wen Lee '96 Memorial Fund supports a lecture each year in Asian American studies. This fund also supports an annual competition for summer research support for projects related to Asian studies or Asian American studies.

The Penelope Mason '57 Memorial Fund for Asian Studies is available to support Asian studies related projects proposed by students, faculty members, or both.

Off-Campus Study

Students with majors in Asian studies are strongly encouraged to undertake a period of study in Asia. The Asian studies faculty can recommend academically rigorous programs in several Asian countries. Study abroad is the ideal arena for intensive language study. Courses taken abroad may be applied toward the major, subject to the approval of the Asian studies coordinator. However, at least half of the credits in a student's Asian studies major or minor should be earned at Swarthmore.

Life After Swarthmore

Students with a background in Asian studies have pursued a number of paths after graduation. Some have gone abroad to continue their studies, do research, or work in humanitarian or social service organizations. Others have gone directly to graduate school. Many eventually become teachers or professors. Others work in the arts, journalism, international law, business, finance, in the diplomatic corps, or in non-governmental organizations. Other Asian studies graduates pursue careers not directly related to Asia, in medicine or law, for example. All consider Asian studies to have been an important part of their liberal arts education.

Courses

(See descriptions in individual departments to determine offerings for each semester.)

Art (Art History)

ARTH 001L. From Handscrolls to Comic Books: Pictorial Narratives in Japan (W)

ARTH 003. Asian Art

ARTH 032. Crafting Nature: The Arts of Japanese Tea Culture (W)

ARTH 033. The Art of Landscape in East Asia

ARTH 034. East Asian Calligraphy

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ARTH 039. Contemporary Japanese Visual Culture

ARTH 136. Word and Image in Japanese Art

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ASIA 093. Directed Reading

1 credit.

Staff.

ASIA 096. Thesis

Writing course.

1 credit.

Staff.

ASIA 180. Honors Thesis

2 credits.

Staff.

Chinese

CHIN 003B. Second-Year Mandarin Chinese

CHIN 004B. Second-Year Mandarin Chinese

CHIN 008/LITR 008CH. Reading Modern

China Through Literary and Cinematic Text

CHIN 009. First-Year Seminar: Heaven, Earth, and Man: Ways of Thought in Traditional Chinese Culture

CHIN 011. Third-Year Mandarin Chinese

CHIN 011A. Third-Year Mandarin Chinese Conversation

CHIN 012. Advanced Mandarin Chinese

CHIN 012A. Advanced Mandarin Chinese Conversation

CHIN 016/LITR 016CH. Substance, Shadow, and Spirit in Chinese Literature and Culture

CHIN 017/LITR 017CH. Legacy of Chinese Narrative Literature: The Story in Dynastic China

CHIN 018/LITR 018CH. The Classical Tradition in Chinese Literature

CHIN 019. First-Year Seminar: Singular Lives and Cultural Paradigms in Early and Imperial China

CHIN 020. Readings in Modern Chinese

CHIN 021. Topics in Modern Chinese

CHIN 023/LITR 023CH. Modern Chinese Literature

CHIN 025/LITR 025CH. Contemporary Chinese Fiction: Mirror of Social Change

CHIN 027/LITR 027CH. Women Writers in 20th-Century China

CHIN 033/LING 033. Introduction to Classical Chinese

CHIN 035. Readings in Classical Chinese

CHIN 055/FMST 055CH. Contemporary Chinese Cinema

CHIN 056/LITR 056CH. History of Chinese Cinema (1905–1995)

CHIN 063/LITR 063CH. Comparative Perspectives: China in the Ancient World

CHIN 066/LITR 066CH. Chinese Poetry

CHIN 069/LITR 069CH. Taste and Aesthetics in Chinese Cultural Traditions

CHIN 071/LITR 071CH. Invaded Ideology and Translated Modernity

CHIN 081/LITR 081CH. Transcending the Mundane: Taoism in Chinese Literature and Culture

CHIN 088/POLS 088. Chinese Governance and Environmental Issues in China

CHIN 091/LITR 091CH. Special Topics in Chinese Literature in Translation

CHIN 092. Special Topics in Chinese Literature and Culture in Chinese

CHIN 103. Lu Xun and His Legacy in 20th-Century Chinese Literature

CHIN 104. Seminar in Chinese Poetry

CHIN 105. Fiction in Traditional China: People and Places, Journeys, and Romances

CHIN 108. Remaking Cinematic China: Zhang Yimou, Wong Kar-wai, and Ang Lee

CHIN 109. Daoism

Dance

DANC 021. History of Dance: Africa and Asia

DANC 025A/SOAN 020J. Dance and Diaspora

DANC 028. Classical Indian Dance

DANC 046. Dance Technique: Kathak

DANC 049. Performance Kathak

DANC 072. Intercultural Performance Methods

DANC 079. Dancing Desire in Bollywood Films

Economics

ECON 081. Economic Development*

ECON 181. Economic Development+

English Literature

ENGL 009D. Nations and Migrations

ENGL 065. Introduction to Asian American Literature

ENGL 075. South Asians in America: Literature, Culture, Politics

ENGL 077. South Asians of Asian America

Film and Media Studies

FMST 055. Contemporary Chinese Cinema

FMST 057. Japanese Film and Animation

Japanese

JPNS 003. Second-Year Japanese

JPNS 004. Second-Year Japanese

JPNS 012. Third-Year Japanese

JPNS 012A. Japanese Conversation

JPNS 013. Third-Year Japanese

JPNS 013A. Readings in Japanese

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JPNS 017/LITR 017J/THEA 017. The World of Japanese Drama

JPNS 018/LITR 018J. Topics in Japanese Literary and Visual Culture

JPNS 019. Topics in Japanese

JPNS 021/LITR 021J. Modern Japanese Literature

JPNS 024/FMST 057. Japanese Film and Animation

JPNS 041/LITR 041J. Fantastic Spaces in Modern Japanese Literature

JPNS 045/LING 047. Japanese Language in Society

JPNS 047. Japanese Food Cultures

JPNS 051. Japanese Poetry and Poetics

JPNS 074/LITR 074J. Japanese Popular Culture and Contemporary Media

JPNS 083/LITR 083J. War and Postwar in Japanese Culture

RELG 031. Religion and Literature: From the Song of Songs to the Hindu Saints*

RELG 108. Poets, Saints, and Storytellers: Religious Literatures of South Asia

Theater

THEA 017/ JPNS 017/LITR 017J. The World of Japanese Drama

* *Cognate course*. Counts toward Asian studies if all papers and projects are focused on Asian topics. No more than two may be applied to the course or honors major. No more than 1 credit may be applied to the honors minor.

+ *Cognate seminar*. No more than 1 credit may be applied toward the honors major. It does not count toward an honors minor.

Music

MUSI 005. Patterns of Asian Dance and Music

MUSI 030. The Music of Asia

MUSI 049A. Performance: Balinese Gamelan

Linguistics

LING 025. Language, Culture, and Society

LING 033/CHIN 033. Introduction to Classical Chinese

LING 047. Japanese Language in Society

Political Science

POLS 046. Chinese Foreign Policy

POLS 055. China and the World

POLS 056. Patterns of Asian Development

POLS 058. Contemporary Chinese Politics

POLS 064. American-East Asian Relations*

POLS 065. Chinese Foreign Policy

POLS 073. Comparative Politics: Advanced Topics in Chinese Politics

POLS 088/CHIN 088. Chinese Governance and Environmental Issues in China

POLS 108. Comparative Politics: East Asia

Religion

RELG 008. Patterns of Asian Religions

RELG 009. The Buddhist Traditions of Asia

RELG 012. The History, Religion and Culture of India I

RELG 012B. Hindu Traditions of India: Power, Love and Knowledge

RELG 013. The History, Religion, and Culture of India II

RELG 030. The Power of Images: Icons and Iconoclasts*

Biology

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SARA HIEBERT BURCH, Professor and Chair
 JOHN B. JENKINS, Professor
 RACHEL A. MERZ, Professor
 KATHLEEN K. SIWICKI, Professor
 ELIZABETH A. VALLEN, Professor
 AMY CHENG VOLLMER, Professor²
 NICHOLAS KAPLINSKY, Associate Professor³
 JOSE LUIS MACHADO, Associate Professor
 ALEXANDER BAUGH, Assistant Professor
 BRAD DAVIDSON, Assistant Professor
 VINCENT FORMICA, Assistant Professor
 JASON DOWNS, Visiting Assistant Professor
 JASON RAUSCHER, Visiting Assistant Professor
 STACEY DOUGHERTY, Laboratory Instructor
 WILLIAM GRESH JR., Laboratory Instructor/Greenhouse Manager
 HEATHER HASSEL-FINNEGAN, Laboratory Instructor
 PHILIP KUDISH, Academic Coordinator/Laboratory Instructor/Science Associate Coordinator
 JOCELYNE MATTEI-NOVERAL, Laboratory Instructor
 ERIN SCHLAG, Laboratory Instructor
 DIANE FRITZ, Administrative Coordinator

² Absent on leave, spring 2013.

³ Absent on leave, 2012–2013.

At all levels of the biology curriculum, students are engaged in learning about the functions and evolution of diverse biological systems as well as the methods by which biologists study nature. There is much flexibility in the curriculum, allowing students to craft a path through the biology major that best suits their own interests. While fulfilling the requirements for the major, students are able to build a broad biological background by taking courses focused on different levels of biological organization, while also being able to concentrate on specialized areas of particular passion if they choose.

Our goals for biology majors

A basic tenet of the department is that the best way to learn about biology is to do biology. Therefore, almost every course has weekly laboratories or field trips, where students learn to become biologists by making original observations, asking questions about life processes, solving problems and designing and testing hypotheses by performing experiments. Communication skills are emphasized in all biology courses, as students read and evaluate research articles in scientific journals, write laboratory reports according to the standards of professional scientific writing, participate in frequent opportunities for oral presentations and critical discussion, and work in research teams. The curriculum prepares students to pursue careers in research or to apply their biology interests and knowledge to careers as diverse as medicine, governmental policy planning, science education, public health, and writing children's books. A number of departmental alumni have also chosen careers outside of

science, such as law and finance, where they report that the organizational, critical thinking, and communication skills that they learned as a biology major have been crucial for their success.

The Academic Program

In addition to first-year seminars, the department offers four different types of courses. Students are introduced to the study of biology at Swarthmore by taking BIOL 001, Cellular and Molecular Biology, and BIOL 002, Organismal and Population Biology. Either course may be taken first. Courses numbered 003–009 do not have associated laboratories; usually BIOL 001 and BIOL 002 are prerequisites. Diverse intermediate-level courses, some offered in alternate years, allow students to choose coursework in areas of particular interest. These courses are numbered 010–039 and generally have BIOL 001 and BIOL 002 (or AP credit) as prerequisites. Some of these courses also require prior coursework in the Chemistry Department. Finally, two-credit seminars (with three-digit course numbers) have an intermediate-level course as a prerequisite and are usually taken by students in their junior or senior years.

Majors and minors

The Biology Department offers a course major, course minor, honors major and honors minor. In addition, special majors in biochemistry and neuroscience are regularly offered in cooperation with the Chemistry and Biochemistry and Psychology departments, respectively. A student may choose an

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interdisciplinary minor in environmental studies, which includes courses in the Biology Department. In addition, the department has also supported special majors as described below.

Sample paths through the discipline

As pointed out in the introduction, there are many paths to a biology major. Following are some ideas to keep in mind as you plan your schedule.

Getting started as a biology major: Many majors take BIOL 001 and/or BIOL 002 during their first year. These two courses may be taken in either order and it is not uncommon for prospective majors to take BIOL 002 during the spring semester of their first year, and BIOL 001 during the fall semester of their second year. Students who realize their interest in biology later have also taken both courses during their sophomore year and successfully completed the major in eight semesters. We generally encourage all students to take at least one of the introductory courses, even if they have AP credit. BIOL 001 is always offered in the fall semester, and BIOL 002 always in the spring semester.

We encourage majors to fulfill the mathematics and chemistry requirements for the major during their first two years. In particular, some intermediate level courses require CHEM 010 (or CHEM 003 and 004) and CHEM 022. Completion of those chemistry courses gives more flexibility in biology course choice. However, we are willing to work with students to craft the best path for each individual.

Continuing as a biology major: Because most intermediate level courses require both BIOL 001 and BIOL 002 (or AP credit), taking both courses before continuing on in the field usually serves students best. For planning purposes, most Group III intermediate-level courses are taught in the fall semester, and most Group I intermediate-level courses are taught in the spring semester. Some Group II courses are taught in spring, and others in fall.

The two-credit seminar course(s) you are most interested in taking may influence your other course choices. In addition to your own interests, prerequisites for seminars (which may consist of a specific intermediate-level course), faculty leave schedules, and study abroad considerations may constrain your course choice and schedule.

Some faculty strongly encourage students interested in doing research with them to take at least one course with them before working on a research project. It is important to talk to specific faculty members you are interested in working with to understand their specific requirements for work in their laboratory.

Completion of the biology major: Course majors must pass the comprehensive exam (BIOL 097 Themes in Biology) during the fall semester of the senior year. Honors majors are required to enroll in at least one credit of BIOL 180 (often but not always in fall semester of the senior year), and in Senior Honors Study (BIOL 199), which is taken in the spring semester of the senior year.

Course Major

Acceptance criteria

- a. Three courses (or advanced placement credit and two courses) in biology. If the student does not have AP or transfer credit, both BIOL 001 and BIOL 002 are required.
- b. One semester of Organic Chemistry (CHEM 022). The prerequisite for CHEM 022 may consist of CHEM 010, CHEM 003 plus CHEM 004, or placement approved by the Chemistry and Biochemistry Department.
- c. Swarthmore College credit for two courses in mathematics or statistics (not STAT 001 or MATH 003). Alternatively, students may complete calculus II (MATH 025). The Biology Department strongly recommends a course in statistics for majors.
- d. Applicants must have an average grade of C (2.00) or better in BIOL 001 and BIOL 002 (or if AP credit is given, in the first two biology courses taken at Swarthmore). In addition, the applicant must have an average grade of C (2.00) or better in all courses taken in the Biology Department, and an overall average grade of C (2.00) or better in the Division of Natural Sciences and Engineering at Swarthmore College (biology, physics and astronomy, chemistry and biochemistry, mathematics and statistics, engineering, and computer science). Unpublished grades in biology for the first semester of the first year will be considered in the C average requirement; passing grades of CR in other courses in the Division of Natural Sciences and Engineering are acceptable.

Requirements for graduation

- e. **Credit requirements:** In addition to fulfilling all the requirements to be accepted as a biology major, the student majoring in biology must have completed by the end of the senior year a minimum of eight biology credits, two of which come from a seminar (numbered 110–139). Students may take a course or seminar in biology as CR/NC but are not encouraged to do so.
- f. **Distribution requirements:** Students majoring in biology must pass at least one course in each of the following three groups: I. Cellular and Molecular Biology, II. Organismal Biology, and III. Population Biology. The digit

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in the tens place of the course number signifies the group of the course (i.e., BIOL 020 is a Group II course and BIOL 114 is a Group I course).

- i. Students majoring in biology may count only one course numbered 003–009 toward the eight required credits. Courses numbered 003–009 do not meet the Group distribution requirement.
 - ii. BIOL 093 (Directed Reading) and BIOL 094 (Independent Research) count as credits toward the biology major but cannot be used as distribution requirements. No more than two credits in BIOL 093, BIOL 094 or BIOL 093 and BIOL 094 in combination may be used to satisfy the eight-credit requirement for the biology major.
 - iii. CHEM 038 (Biochemistry) may be counted as a Group I course. In this case, the CHEM 038 grade will be counted towards the biology GPA.
- g. Seminar requirement: All biology majors are required to include at least one two-credit seminar (with a number greater than 100) in their courses in the major. A seminar in biology is defined as an advanced offering that uses primary rather than secondary source materials and encourages active student participation in presentation and discussion of materials. Note that all two-credit seminars have at least one intermediate level course (numbered 10–39) as a prerequisite; the particular prerequisites for seminars vary and should be considered during selection of intermediate level courses.
- i. All seminars must be taken at Swarthmore College.
 - ii. A student may, with permission of the faculty instructor, take a seminar without the laboratory component. A seminar without the laboratory component becomes a BIOL 093 and does not meet the seminar requirement.
- h. Comprehensive examination: All biology course majors must satisfy the general College requirement of passing a comprehensive examination given by the major department. In biology, this comprehensive examination is the lecture series BIOL 097, Themes in Biology. BIOL 097 is offered only in the fall semester and is usually taken by students during the fall of their senior year. This course features a series of visiting speakers who give presentations connected by an overarching theme that can be addressed from all areas of biology. It enables faculty and students to interact on an intellectually challenging project, allows students to think about a topic from a variety of levels of biological organization and

gives students the opportunity to meet and interact with a variety of distinguished biologists.

- i. Students are required to take and complete the requirements of BIOL 097 but are not required to register for the course for credit. BIOL 097 does not count as one of the eight credits required for a major in biology, although it can be counted as one of the 32 credits required for graduation.
- ii. Evaluation of a student's performance for this comprehensive examination will be Pass/No Pass and will be based on the questions prepared by each individual and team for each lecture, participation in discussions, hosting a guest speaker and the final presentation. For students enrolled in BIOL 097 for credit, Pass/No Pass on the comprehensive exam will be translated into Credit/No Credit for purposes of earning credit.
- iii. Students who fail BIOL 097 fail the comprehensive exam and thus may not graduate. The department will evaluate all such failures and decide on the appropriate action. Students will be notified of failure by the first day of classes in the spring semester of their senior year.
- iv. If a student is given permission by the College to be away from campus during the fall semester of the senior year, the Biology Department faculty may give permission to the student to write a senior paper and enroll in BIOL 095, a Senior Project, to satisfy the College requirement of a comprehensive examination. Alternatively, the student may be given permission by the Biology faculty to enroll in Themes in Biology during the junior year if the student has planned in advance to be away during the fall semester of the senior year.

Course Minor

Students who wish to minor in biology must complete six credits, at least four of which are to be taken at Swarthmore College. The GPA requirement to enter the minor is the same as for biology course majors 2.00 in BIOL 001 and BIOL 002, 2.00 in courses taken in the Biology Department, and 2.00 in all courses taken in the Division of Natural Sciences and Engineering. Both BIOL 001 and BIOL 002 are required (although one or both of these may be replaced by credit from an advanced placement examination after another biology course is completed; note that the department strongly

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encourages all students with AP credit to take at least one of the introductory courses). There are no requirements for courses outside the department. There is no distribution requirement within the department for the minor. Only one course numbered 003–009 is allowed. Only one credit in BIOL 093 or BIOL 094 is allowed. CHEM 038 (Biochemistry) may be counted as one of the six biology credits

Honors Major

Acceptance criteria

a. The course requirements for an honors major in biology are the same as those for a course major in biology (see above).

b. Admission to the Honors Program in biology is based on academic record. Applicants to the Honors Program in biology must have a grade point average (GPA) of 3.00 in all courses taken in the Natural Sciences and Engineering Division at Swarthmore College and must obtain a grade of B or better in all lecture courses and seminars used for the Honors Program. Applicants must also have a GPA of 3.00 in all biology courses. Unpublished grades in biology for the first semester of the first year will be considered in these requirements; passing grades of CR in other courses in the Division of Natural Sciences and Engineering are acceptable.

c. Students should list the anticipated fields of study, including two 2-credit seminar courses, in their Sophomore Plan.

d. Students who are accepted into the program must select a research project and mentor by the middle of the junior year. Final approval of the student's Honors Program will occur during the fall semester of the senior year when the Final Honors Program Form is signed by the chairs of the participating departments.

Requirements for graduation

a. **Credit requirements for honors:** In addition to fulfilling the requirements to be accepted as a biology honors major, the student majoring in biology must complete a minimum of eight biology credits. Students may take a course or seminar in biology as CR/NC but are not encouraged to do so. Students must earn a grade of B or better for all courses and seminars used for honors preparations. Honors students may not take Bio 097, Themes in Biology, for credit but are welcome and encouraged to attend the seminars.

b. **Distribution requirements for honors:** Students graduating with an honors major in biology must pass at least one course in each of the following three groups: I. Cellular and Molecular Biology, II. Organismal Biology, and III. Population Biology. The digit in the tens place of the course number signifies the group

of the course (i.e., BIOL 020 is a Group II course and BIOL 114 is a Group I course).

i. The Biology Department faculty strongly encourage honors students to fulfill their group distribution requirements with intermediate- or seminar-level courses. Our experience has been that students with coursework at these levels have a more complete and deeper understanding of biology. In addition, students who alter their plans and withdraw from the Honors Program have much more flexibility in scheduling if they have already planned to fulfill the department distribution requirement with intermediate- or seminar-level courses. To mitigate the scheduling constraints imposed by the Honors Program, however, the following rules also apply to honors students:

- 1) BIOL 001 may be counted as a Group I course, **or** BIOL 002 may be counted as a Group III course for purposes of the distribution requirement for honors majors.
- 2) An honors major who has taken both BIOL 001 and BIOL 002 can use them to satisfy any **one** of the distribution requirements.
- 3) AP credit may not be used to satisfy the distribution requirement.

c. **Seminar requirement for honors:** All honors biology majors are required to complete at least two 2-credit seminars (those with a number greater than 100) for honors preparations. A seminar in biology is defined as an advanced offering that uses primary rather than secondary source materials and encourages active student participation in presentation and discussion of materials. Note that all two-credit seminars have a prerequisite course from the intermediate level (numbered 010–039); the particular prerequisites for each seminar should be considered during selection of intermediate level courses.

i. The two seminars used for honors preparations must be taken from different faculty members and must be taken at Swarthmore College.

d. **Research (Thesis) requirement for honors:** At least one, but not more than two, credits of thesis research (BIOL 180) are required. Thesis research will be graded by an External Examiner. The thesis research will be a substantial project carried out over 2 semesters, 2 summers, **or** 1 summer + 1 semester.

i. The primary mentor for the thesis need not be a Swarthmore faculty member, but a Swarthmore faculty member must agree to be an on-campus mentor.

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- ii. Students should plan on completing their research by the end of the fall semester of their senior year.
- iii. The honors thesis has a page limit of 20 pages, not counting references, figures, figure legends or tables.

e. **Senior Honors Study:** Senior Honors Study (BIOL 199) is required for all honors majors in the spring semester of their senior year. This integrative/interactive program prepares each student to finalize and present his or her thesis work formally, in both oral and written forms. During the first few meetings of the semester, faculty members are available for consultation about data analysis. At mid-semester, students present posters of their projects to the faculty and other honors students for review. Comments from faculty and students on these posters will guide students in revising and polishing their written theses. SHS BIOL 199 is Credit/No Credit and the evaluation is done by the biology faculty.

f. **Review of work for honors:** The Biology Department will review the academic work of all candidates for the external examination at the end of the junior year and in November of their senior year. Progress on thesis research is assessed at the beginning of the fall semester of the senior year. At these times, the department may ask a candidate not to discontinue participation in the Honors Program. Withdrawal from the Honors Program must occur by December 1 of the student's senior year. At that time, the student is responsible for consulting with the department about satisfying the comprehensive requirement for the major.

g. **Honors examinations:** Students will take two written examinations, one based on each of their seminar preparations. The biology written examinations will be closed-book, 3-hour exams. The oral exams are normally one-on-one, but there are special circumstances under which a student may be examined by a panel of examiners. Oral examinations for seminar preparations are normally 45 minutes in length. The oral exams for thesis research are 60 minutes in length.

Honors Minor

Biology minors in the Honors Program do not need to satisfy the distribution requirements of the major or take chemistry or mathematics unless required to do so for a specific preparation. Honors minors do not participate in Senior Honors Study. Applicants to the Honors Program in biology must have a GPA of 3.00 in all courses taken in the Divisions of Natural Sciences and Engineering, a GPA of 3.00 in all biology courses taken at Swarthmore College, and a grade of B or better in all lecture courses and seminars used for the Honors Program.

The program in biology for an honors minor requires at least four credits and usually consists BIOL 001 and BIOL 002, an intermediate level course (course number between 10 and 39) and a two-credit seminar (course number greater than 100).

Application Process Notes for the Major or the Minor

In addition to the process described by the Dean's Office and the Registrar's Office for how to apply for a major, we also ask that you attend the departmental information meeting for sophomores. A copy of the *Biology Student Handbook*, which contains detailed information about courses and other aspects of the major, minor, and regularized special majors, is available online via a link from the departmental homepage at www.swarthmore.edu/biology.

Applicants from the sophomore or junior classes who have completed all the requirements with the appropriate grades are accepted as a course major in biology. Applicants from the sophomore class who are in the process of completing these requirements with the required GPA are accepted contingent upon successful completion of the missing courses. Others who will not complete these requirements by the end of the current semester are deferred until the requirements are met. All students who have applied for the major in biology and who have been accepted or deferred are assigned an adviser in the Biology Department.

Special Majors and Minors

Biochemistry

The Biology Department, in collaboration with the Chemistry and Biochemistry Department, offers a course major and an honors major in biochemistry. This major gives students the opportunity to gain a strong background in chemistry with special emphasis on the application of chemistry to biological problems. Approval and advising for this special major are obtained through the Chemistry and Biochemistry Department and details about the course and honors major can be found in the Chemistry and Biochemistry section of this catalog. The Biology Department encourages biochemistry majors to take both BIOL 001 and BIOL 002 as a number of intermediate level courses in biology require both courses as a prerequisite.

a. Honors biochemistry majors are expected to participate in Senior Honors Study (BIOL 199) only if the thesis research is done in the Biology Department.

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b. Honors biochemistry majors must conduct thesis research with a Swarthmore faculty member.

Neuroscience

The Psychology and Biology departments offer a course major and an honors major that combines work in the two departments in a way that allows students flexibility in choosing the focus of their Neuroscience major. Approval and advising for this special major is done through both departments and details about the course and honors major can be found in the psychology section of this catalog.

Bioeducation

The special major in Bioeducation consists of six courses in biology. Students must complete at least one course in each group (I, II, and III) and one course in Evolution (BIOL 034). In addition to the six biology courses, students must complete CHEM 010 (or CHEM 003 plus CHEM 004) and CHEM 022, one year of mathematics (not MATH 001 or 003), and write a thesis to be supervised by faculty in the Biology and Educational Studies Departments. The special major in Bioeducation will include at least four education courses to be approved by the Educational Studies Department. Students should consult with the chair of the Educational Studies Department about further requirements for the Bioeducation special major. Approval and advising for this special major are through both the Biology and Educational Studies Departments.

Environmental Studies

A minor in environmental studies consists of an integrated program of five courses plus a capstone seminar (ENVS 091), which a student takes in addition to a regular major. The details of the minor and courses offered may be found at www.swarthmore.edu/envs.xml. The five courses must include at least one course in environmental science/technology; at least one course in environmental social science/humanities; and at least one more course from either of these two groups for a minimum of three courses from these two lists. Up to two of the five required courses may be chosen from the list designated adjunct and interdisciplinary courses. The capstone seminar is offered in the spring of the student's senior year. Advising for this program is by the chair of the Environmental Studies Committee.

Other special majors

Individualized special majors may be constructed after consultation with the chairs and approval of the participating departments. The special major is expected to specify a field of learning that crosses departmental boundaries and can be treated as a sub-field within the normal departmental major.

Individualized special majors consist of at least 10 credits, but usually not more than 12. A more detailed explanation of the individualized special major is found in Chapter 7 "Educational Program." Previously approved special majors include Cognitive Science, Neuroscience, Environmental Science, Biostatistics and Biophysics.

Thesis / Culminating Exercise

See Acceptance Criteria and Requirements for Graduation, Comprehensive Examination.

Advanced Placement/International Baccalaureate Credit

Both BIOL 001 and BIOL 002 are required for the biology major and minor. However, one or both of these courses may be replaced by credit from one of the advanced placement examinations listed below, which will be granted after one biology course with laboratory is completed in the department. One biology credit is awarded for a score of 5 on the advanced placement examination; a score of 6 or 7 on the International Baccalaureate; or A on the Higher Level of Biology, Advanced Level Examination, German Abitur, Austrian Matura or French Baccalaureate exam. Note that the department strongly encourages all students with advanced placement credit to take at least one of the introductory courses.

Transfer Credit

Credit for courses taken at an institution at which the student was previously matriculated may be counted toward the biology major. Courses will be evaluated on an individual basis to determine which departmental distribution requirements they meet.

Off-Campus Study

The Biology Department faculty enthusiastically support study abroad for their majors. Majors may study abroad and earn credits that count toward the requirements for a biology major or, alternatively, participate in programs without earning biology credit, while still completing the major in eight semesters. By college regulation, we cannot guarantee a specific amount of credit in advance toward the Swarthmore degree for successful completion of academic work completed at other institutions, with the exception of regular semester coursework at Bryn Mawr, Haverford, and the University of Pennsylvania completed under the four-college arrangement. Notwithstanding this restriction, our experience has shown that, with proper advance planning, study abroad is nearly always compatible with

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completion of the degree in eight semesters (including the semester(s) spent abroad). Planning is the key to success, and students contemplating study abroad are urged to see the Off-Campus Study Adviser early in the planning process.

Prior to studying abroad, students should obtain preapproval and credit estimation from the faculty member with teaching and research interests most closely related to the proposed course. At this time, the faculty member will describe what course characteristics are important for obtaining Swarthmore College credit, how credit will be calculated upon completion of the program, and which departmental distribution requirements, if any, the courses are likely to fulfill.

Upon return, the student should present a transcript, syllabus of the course (including the number of hours in lecture and laboratory), class notes, laboratory directions, examinations, laboratory reports and any papers or other written work (but not the textbooks) to the Biology Department's Academic Coordinator, who will then determine which faculty member will be asked to award credit for the course. Courses without a laboratory will be awarded no more than one-half credit.

Research and Service-Learning Opportunities

Academic year opportunities

Research

Students may receive academic credit for research carried out either on- or off-campus (BIOL 094). Students interested in doing research on campus should contact individual faculty members directly. For off-campus research credit in BIOL 094, the student must submit a one-page proposal to the department indicating 1) prior course work in the area of research, 2) previous technical experience in a laboratory, 3) the name and address of the director of the laboratory and the name of the person under whom the student will work directly, and 4) a short description of the proposed project and the methods to be used in the investigation. This proposal must be presented to the chair of the Biology Department, no later than one week before registration for the semester in which credit will be received.

There are also opportunities for students to be paid for research during the academic year. Individual faculty members should be contacted about the potential for positions in their laboratory.

Academic Assistants

Each year approximately 10 students are selected to assist in the BIOL 001 and BIOL

002 laboratories. These students are selected for their academic excellence, laboratory expertise, and ability to communicate with students. Each selected student assists in one laboratory per week and attends a weekly staff meeting for the course. BIOL 002 hires two or three additional students to staff evening computer clinics. Contact the laboratory coordinator for BIOL 001 or BIOL 002 for more information.

Approximately eight students are selected as Science Associates (SAs) for excellence in comprehension, communication and compassion. SAs attend all BIOL 001 and BIOL 002 lectures on Monday, Wednesday, and Friday mornings, meet weekly with the SA program coordinator and faculty lecturers throughout the semester, and facilitate small group problem-based learning in evening study sessions. Contact Philip Kudish for more information.

Dean's tutors in biology are hired on a rolling basis, to support student learning in BIOL 001 and BIOL 002. This is a flexible student position in which tutors meet one-on-one with students at mutually convenient times, typically for one hour per week. Contact Philip Kudish for more information.

Experienced students are hired as laboratory assistants, van drivers and/or study guides in several intermediate level courses, including Genetics, Marine Biology, and Neurobiology. Students are also hired to help with the care of organisms associated with various courses and research laboratories. The departmental administrative assistant, animal facility manager and greenhouse manager, as well as individual faculty members, may be contacted about these positions.

The department collaborates with the Chester Children's Chorus (www.chesterchildrenschorus.org/) to support Science for Kids, a summer and academic year program focused on engaging children from the nearby Chester-Upland school district with experimental science. The academic year program meets on Saturdays while classes are in session and the College has funds from the Howard Hughes Medical Institute to pay Swarthmore students involved in the program.

Student Committee for faculty searches

Each year the Biology Department conducts several searches for replacement faculty to teach courses when regular members of the department are on leave. In some years there is a search for a permanent or tenure-track position. Students are invited to serve on a Student Search Committee to interview and help select a candidate.

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Summer opportunities

Research

Paid fellowships for summer research are offered by the Biology Department as well as other institutions. Funds are available for field and laboratory research projects conducted on- and off- campus. Information regarding the awards, application deadlines and downloadable applications are available on the Biology Department website. An information session is usually offered at the end of the fall semester to describe opportunities in more detail.

Community service

The Biology Department collaborates with the Chester Children's Chorus (www.chesterchildrenschorus.org) to support Science for Kids, a summer and academic year program focused on engaging children from the nearby Chester-Upland school district with experimental science. The summer program commitment is 5-8 hours per week for 5 or 6 weeks and can usually be integrated with a full-time job or research position elsewhere on campus. Contact Liz Vallen or Jocelyne Noveral if you will be on campus for the summer and are interested in participating.

Teacher Certification

Students may complete the requirements for teacher certification through a program approved by the state of Pennsylvania. Options to pursue a biology major along with teacher certification, or to pursue a special major in biology and educational studies are available. For further information about the relevant set of requirements, please refer to the Educational Studies section of the Bulletin.

Life After Swarthmore

Graduate school

Many of our majors have gone on to graduate school in biology after completion of their degree. While some students attend graduate school immediately after graduation from Swarthmore, others work for at least a year or two before applying to graduate programs. This time between finishing at Swarthmore and graduate school can be used to gain more experience in biology, or to try out a new field. These experiences both strengthen your graduate school applications and help you to know what you are most interested in studying. One- or two-year jobs are available at a variety of research institutes, field stations, universities, museums, government laboratories and companies.

The *Biology Student Handbook* contains specific suggestions for applying to graduate programs and Biology Department faculty are

happy to talk with students about programs and projects. Note that graduate schools in biology pay Ph.D. students a stipend for research and/or teaching. In addition, a few prestigious fellowships (e.g., National Science Foundation Graduate Research Fellowship) are awarded to the student (not to the program), giving the recipient more flexibility and autonomy in their graduate program.

Career options/opportunities

In addition to graduate school and professional school (medical, law, veterinary, business) there are many other job possibilities. The American Institute of Biological Sciences web page (www.aibs.org/careers/), which describes jobs open to people with a degree in biology, is a helpful resource. A degree in biology can lead to positions in the following areas:

Research: This could include laboratory work, fieldwork, or some combination of the two.

Major employers include universities, research institutes, non-government organizations and companies (e.g., pharmaceutical, agricultural, biotechnology, food science).

Healthcare: Many doctors, dentists, nurses, veterinarians, laboratory technicians and other health care providers have backgrounds in the biological sciences. Other biologists utilize their background in disease prevention and control.

Environmental management: Park rangers, conservation biologists, zoo biologists, and land management specialists use their background in biology to develop and evaluate management plans to conserve natural resources.

Education: In addition to serving as university and college professors, some of our graduates teach in elementary and secondary schools, at museums and zoos, and at aquaria and nature centers. Biology majors also author newspaper and magazine articles, and may contribute to textbooks as writers, editors or illustrators.

Other ideas: Our graduates have obtained jobs in politics and policy, in areas such as economic and biological impacts of land use practices, science advising on biomedical procedures, effects of climate change, and educating members of Congress about scientific issues. Other biology majors have found positions in forensics, bioinformatics and computational biology. Finally, some majors have had careers in investment banking, consulting and law.

Courses

Biology course numbers reflect study at different levels of organization—General Studies (001–009), intermediate courses in Cellular and Molecular Biology (010–019), Organismal Biology (020–029), Population Biology (030–039), Seminars in Cellular and Molecular Biology (110–119), Seminars in

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Organismal Biology (120–129), and Seminars in Population Biology (130–139).

General Studies

BIOL 001. Cellular and Molecular Biology

An introduction to the study of living systems illustrated by examples drawn from cell biology, biochemistry, genetics, microbiology, neurobiology, and developmental biology.

One laboratory period per week.

Natural sciences and engineering practicum.

Writing course.

1 credit.

Fall 2012. Staff.

BIOL 002. Organismal and Population Biology

Introduction to the study of organisms emphasizing morphology, physiology, behavior, ecology, and evolution of whole organisms and populations.

One laboratory period per week.

Natural sciences and engineering practicum.

Writing course.

1 credit.

Spring 2013. Staff.

Group I: Cellular and Molecular Biology (010–019)

BIOL 010. Genetics

This introduction to genetic analysis and molecular genetics explores basic principles of genetics, the chromosome theory of inheritance, classical and molecular strategies for gene mapping, strategies for identifying and isolating genes, the genetics of bacteria and viruses, replication, gene expression, and the regulation of gene activity. Major concepts will be illustrated using human and nonhuman examples.

One laboratory period per week.

Prerequisite: BIOL 001 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Jenkins.

BIOL 014. Cell Biology

A study of the ultrastructure, molecular interactions, and function of cell components, focusing primarily on eukaryotic cells. Topics include protein and membrane structure, organelle function and maintenance, and the role of the cytoskeleton.

One laboratory period per week.

Prerequisites: BIOL 001 and BIOL 002, and previous or concurrent enrollment in CHEM 022; or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Vallen.

BIOL 016. Microbiology

This study of the biology of microorganisms will emphasize aspects unique to prokaryotes.

Topics include microbial cell structure, metabolism, physiology, genetics, and ecology.

Laboratory exercises include techniques for detecting, isolating, cultivating, quantifying, and identifying bacteria. Students may not take both BIOL 016 and BIOL 017 for credit.

One laboratory period per week.

Prerequisites: CHEM 022; BIOL 001 and BIOL 002 or by permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Next offered spring 2014. Vollmer.

BIOL 017. Microbial Pathogenesis and the Immune Response

A study of bacterial and viral infectious agents and of the humoral and cellular mechanisms by which vertebrates respond to them. Laboratory exercises include techniques for detecting, isolating, cultivating, quantifying, and identifying bacteria. Students may not take both BIOL 016 and BIOL 017 for credit.

One laboratory period per week.

Prerequisites: CHEM 022; BIOL 001 and BIOL 002 or by permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013. Vollmer.

Group II: Organismal Biology (020–029)

BIOL 020. Animal Physiology

An examination of the principles and mechanisms of animal physiology, ranging from the subcellular to the integrated whole animal in its environment. Possible topics include metabolism, thermoregulation, endocrine regulation, nutrient processing, and muscle physiology.

Prerequisites: BIOL 001 and BIOL 002. CHEM 010 is recommended.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Hiebert Burch.

BIOL 021. Comparative Vertebrate Anatomy

A system by system examination of vertebrate morphology with an appreciation for the variation offered by the diversity of vertebrate

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forms. While morphology or physical form is the focus, each anatomical system is presented within a context of function and evolution. Laboratory exercises will involve dissection.

One laboratory period or field trip per week.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Downs.

BIOL 022. Neurobiology

A comprehensive study of the basic principles of neuroscience, ranging from the electrical and chemical signaling properties of neurons and their underlying cellular and molecular mechanisms to the functional organization of selected neural systems.

One laboratory period per week.

Prerequisites: BIOL 001 and CHEM 010.

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Siwicki.

BIOL 024. Developmental Biology

In this course, we will explore the process by which single cells (fertilized eggs) develop into complex organisms. Students will conduct detailed observations of live embryos and engage in independent experimental analysis during weekly laboratory sessions.

One laboratory period per week.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Davidson.

BIOL 025. Plant Biology

This course is an exploration of the diverse field of plant biology. Topics will include growth and development, reproduction, genetics and genome biology, evolution and diversity, physiology, responses to pathogens and environmental stimuli, domestication, agriculture, and applications of plant genetic modification. Laboratories will introduce organismal, cellular, molecular, and genetic approaches to understanding plant biology.

One laboratory period per week.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Next offered spring 2014. Kaplinsky.

BIOL 026. Invertebrate Biology

The evolution, morphology, ecology, and physiology of invertebrate animals.

One laboratory period per week; some all-day field trips.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Merz.

Group III: Population Biology (030–039)

BIOL 030. Animal Behavior

Prerequisites: BIOL 001 and 002 or permission of the instructor

Natural sciences and engineering practicum.
1 credit.

Next offered fall 2013. Baugh.

BIOL 031. History and Evolution of Human Food

In this class we will explore the biology and history of the food we eat. How, where and why were food species domesticated, and what are the morphological, and genetic changes that occurred? We will also explore modern methods for improving food species and the environmental impact of agriculture. In the laboratory, we will explore the taxonomy, morphology, genetics and chemistry of food plants, discuss scientific literature and perhaps do some cooking and eating.

Prerequisites: BIOL 001 and 002 or permission of the instructor.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Rauscher.

BIOL 034. Evolution

The course focuses on how the genetic structure of a population changes in response to mutation, natural selection, and genetic drift. Other topics, such as evolutionary rates, speciation, phylogeography, and extinction, provide a broader view of evolutionary processes.

One laboratory period or field trip per week.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Formica.

BIOL 035. History of Life

An exploration of the evolutionary history responsible for the incredible diversity of organisms on earth today. An understanding of this history will be developed through study of geological processes, reconstruction of evolutionary relationships, and a familiarity with the fossil record. Readings and discussion of primary literature will supplement the course material.

One laboratory per week.

Prerequisites: BIOL 001 and BIOL 002.

1 credit.

Not offered 2012–2013. Downs.

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BIOL 036. Ecology

The goal of ecology is to explain the distribution and abundance of organisms in nature through an understanding of how they interact with their abiotic and biotic environments. Students will gain ecological literacy and practice by studying processes that operate within and between hierarchical levels or organization such as individuals, populations, communities, and ecosystems. All this knowledge will be applied to understand the current global changes occurring in nature as a result of human activities.

Three to 6 hours of laboratory and/or fieldwork in the Crum Woods per week, in addition to at least one field trip per semester.

Prerequisites: BIOL 002 or permission of the instructor.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Machado.

BIOL 037. Conservation Genetics

Conservation efforts to lessen human impacts and manage natural systems require a deep understanding of biology, from ecosystems to individual species. In this class we will apply population genetic theory, genetics, and molecular genetics to learn how to better understand and manage wild and captive populations of organisms. The laboratory will include discussions of scientific literature, genetic analyses of natural populations using molecular markers, and interactions with local organizations involved in conservation efforts.

Prerequisites: BIOL 001 and 002 or permission of the instructor.

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Rauscher.

BIOL 039. Marine Biology

Ecology of oceans and estuaries, including discussions of physiological, structural, and behavioral adaptations of marine organisms. One laboratory per week; several all-day field trips.

Prerequisites: BIOL 001 and BIOL 002.

Natural sciences and engineering practicum.
1 credit.

Next offered fall 2013. Merz.

Independent Studies

BIOL 093. Directed Reading

A program of literature study in a designated area of biology not usually covered by regular courses or seminars and overseen by a biology faculty member.

0.5 or 1 credit.

Fall or spring semester. Staff.

BIOL 094. Research Project

Qualified students may pursue a research program for course credit with the permission of the department. The student will present a written report to the biology faculty member supervising the work.

0.5 or 1 credit.

Fall or spring semester. Staff.

BIOL 094A. Research Project: Departmental Evaluation

Students carrying out a BIOL 094 research project will present a written and oral report on the project to the Biology Department.

0.5 credit.

Fall or spring semester. Staff.

BIOL 180. Honors Research

Independent research in preparation for an honors research thesis.

Fall or spring semester. Staff.

Senior Comprehensive Examination

BIOL 095 and BIOL 097 are not part of the 8-credit minimum in biology.

BIOL 095. Senior Project

With the permission of the department, a student may write a senior paper in biology to satisfy the requirement of a comprehensive examination for graduation.

BIOL 097. Themes in Biology

Invited scientists present lectures and lead discussions on a selected topic that can be engaged from different subdisciplines within biology. Serves as the senior comprehensive and examination; it is required of all biology majors in course.

Fall 2012. Staff.

Honors Study

BIOL 199 is not part of the 8-credit minimum in biology.

BIOL 199. Senior Honors Study

An interactive, integrative program that allows honors students to finalize their research thesis spring semester.

Writing course.

1 credit.

Spring 2013. Staff.

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Seminars

BIOL 110. Human Genetics

In this exploration of the human genome, the topics to be discussed will include patterns of human inheritance; classical and molecular strategies for mapping and isolating genes; the metabolic basis of inherited disease; the genetic basis of cancer; developmental genetics; complex-trait analysis; the genetic basis of human behavior; and ethical, legal, and social issues in human genetics.

Attendance at medical genetics rounds and seminars at the University of Pennsylvania School of Medicine is required.

Prerequisite: BIOL 010 or permission of the instructor.

Lab required.

Natural sciences and engineering practicum.
2 credits.

Spring 2013. Jenkins.

BIOL 114. Symbiotic Interactions

This seminar will focus on the molecular basis of plant-microbe, animal-microbe, and possibly microbe-microbe symbioses. In addition to studying specific systems, common themes and pathways will be analyzed and discussed (nutrient exchange, suppression of the immune response, specificity of host-symbiont recognition, etc.). Readings will be primarily from the research literature. Laboratory projects will use molecular techniques and likely focus on the sea anemone *Aiptasia* and its symbiotic, photosynthetic dinoflagellate, *Symbiodinium*.

One laboratory per week.

Prerequisites: CHEM 022, and any Group I or Group II biology course.

Lab optional.

Natural sciences and engineering practicum.
1 or 2 credits.

Fall 2012. Vallen.

BIOL 115E. Plant Molecular Genetics and Biotechnology

The course will investigate the technological approaches that plant scientists are using to address environmental, agricultural, and health issues. Topics will include biofuels, nutritional engineering, engineering disease and stress resistance, bioremediation, and the production of pharmaceuticals in plants. This course consists of one discussion and one laboratory per week. Laboratory projects will include independent and ongoing research.

One laboratory per week.

Prerequisites: BIOL 001, BIOL 002, and BIOL 025 or permission of instructor.

Lab optional.

Natural sciences and engineering practicum.

1 or 2 credits.

Next offered fall 2013. Kaplinsky.

BIOL 116. Microbial Processes and Biotechnology

A study of microbial mechanisms regulating metabolism and gene expression in response to natural and experimental stressors. Technical and ethical applications of these concepts in biotechnology will be addressed.

Independent laboratory projects.

Prerequisites: BIOL 016 or BIOL 017 or permission of the instructor.

Lab required.

Natural sciences and engineering practicum.

Writing course.

2 credits.

Fall 2012. Vollmer.

BIOL 119. Genomics and Systems Biology

Fundamental questions in biology are being answered using revolutionary new technologies including genomics, proteomics, metabolomics, systems biology, modeling, and large scale protein and genetic interaction screens. These approaches have fundamentally changed how scientists investigate biological problems and allow us to ask questions about cells, organisms and evolution that were impossible to address even five years ago. Readings will include animal, plant, fungal, and bacterial literature. Laboratory projects will incorporate genomic and molecular approaches.

One laboratory per week.

Prerequisites: BIOL 001 and BIOL 002 or the equivalent and one Group I or Group II biology course.

Natural sciences and engineering practicum.

2 credits.

Not offered 2012–2013. Kaplinsky.

BIOL 123. Learning and Memory

Neural systems and cellular processes involved in different types of learning and memory are studied through reading and discussion of research literature.

Independent laboratory projects.

Prerequisite: BIOL 022 or permission of the instructor.

Lab optional.

Natural sciences and engineering practicum.

1 or 2 credits.

Fall 2012. Siwicki.

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BIOL 124. Hormones and Behavior

This course will focus on endocrine regulation of animal behaviors, including reproduction, aggression, stress, sickness, parental care, and seasonality, with an emphasis on critical reading of primary literature.

Independent laboratory projects.

Prerequisites: BIOL 001 and 002 or the equivalent and one of the following: BIOL 020, 022, or permission of the instructor.

Lab optional.

Natural sciences and engineering practicum.

1 or 2 credits.

Spring 2013. Hiebert Burch.

BIOL 125. Frontiers in Developmental Biology

Through discussion of the primary literature and independent experimental studies, students will investigate current gaps in our understanding of animal development. Potential topics include: the interplay between embryonic development and evolution; how gene regulatory networks generate complex patterns of cell identity; and the ability of cells to interpret their environment using dynamic internal structures.

Lab required.

Prerequisites: BIOL 001 and 002 or permission of the instructor.

Natural sciences and engineering practicum.

2 credits.

Fall 2013. Davidson.

BIOL 126. Biomechanics

Basic principles of solid and fluid mechanics will be explored as they apply to the morphology, ecology, and evolution of plants and animals.

Prerequisites: BIOL 001 and 002 or the equivalent and one other Group II or Group III biology course.

Lab required.

Natural sciences and engineering practicum.

2 credits.

Spring 2013. Merz.

BIOL 131. Animal Communication

This seminar will examine animal communication from a cross-disciplinary perspective with a focus on the physiological basis and evolution of communication systems and an emphasis on understanding the primary literature. Overview of basic concepts in animal behavior provided. Lab and field component combines descriptive and experimental approaches.

One required laboratory per week.

Prerequisites: BIOL 001 and 002 or permission of the instructor.

2 credits.

Spring 2013. Baugh.

BIOL 136. Molecular Ecology and Evolution

Understanding molecular techniques and analysis has become increasingly important to researchers in the fields of ecology and evolution. Through discussion of the primary literature, and independent laboratory projects, students will explore how molecular tools are being implemented in studies of biogeography, dispersal, mating systems, biological diversity, and speciation. Depending on interest, topics such as wildlife forensics, conservations genetics, human migration, molecular clocks, and bioinformatics will also be discussed.

One required laboratory each week with continuing, independent laboratory projects.

Prerequisites: BIOL 010, 011, 018 or 111 or permission of the instructor.

Natural sciences and engineering practicum.

2 credits.

Spring 2014. Formica.

BIOL 137. Biodiversity and Ecosystem Functioning

Can the current decline in global biodiversity alter the functioning and stability of ecosystems? The answer to this question can be reached by evaluating the ecological consequences of changing patterns in biodiversity, through either extinction or addition of species. We will review the relative or specific role of extrinsic factors (climate, disturbance, soils, etc.), genetic, taxonomic, and functional diversity in ecosystem functioning using both experimental and natural evidence.

Prerequisite: Any biology course numbered BIOL 026 or higher. Students with preparation outside biology should seek permission of the instructor.

Lab optional.

Natural sciences and engineering practicum.

1 or 2 credits.

Spring 2013. Machado.

BIOL 138. Paleontology

The extraordinary diversity of life is the product of the ongoing processes of speciation and extinction. An understanding of the fossil record is essential to the formulation of robust hypotheses about evolutionary history and the relationships that tie together all forms of life.

This seminar will use independent research projects and a synthesis of primary literature to highlight the key role that paleontological data play in a range of biological research pursuits.

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Prerequisites: BIOL 001 and 001, and any one Group II or Group III course; or permission of the instructor.

Lab required.

Natural sciences and engineering practicum.

2 credits.

Spring 2013. Downs.

Black Studies

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Coordinator: KEITH REEVES (Political Science)
Anna Everetts (Administrative Assistant)

Committee: Timothy Burke (History) ²
Sydney Carpenter (Studio Art) ³
Anthony Foy (English Literature) ³
Sharon Friedler (Dance) ³
Nina Johnson (Black Studies, Sociology and Anthropology)
Cheryl Jones-Walker (Black Studies, Educational Studies)
Micheline Rice-Maximin (Modern Languages and Literatures, French)
Peter Schmidt (English Literature)
Christine Schuetze (Sociology and Anthropology)
Sarah Willie-LeBreton (Black Studies, Sociology and Anthropology) ³
Carina Yervasi (Modern Languages and Literatures, French)

² Absent on leave, spring 2013.

³ Absent on leave, 2012–2013.

The purpose of the Black Studies Program is to introduce students to the history, culture, society, and political and economic conditions of black people in Africa, the Americas, and elsewhere in the world. To explore new approaches—in perspectives, analyses, and interdisciplinary techniques—appropriate to the study of black experience.

Black studies has often stood in critical relation to the traditional disciplines by exploring new approaches—in perspectives, analyses, and interdisciplinary techniques—appropriate to the study of black experience. Its scholars have used traditional and nontraditional methodological tools to pursue knowledge that assumes the peoples and cultures of Africa and the African diaspora are central to understanding the world accurately. The courses in the Black Studies Program at Swarthmore enhance the liberal arts tradition of the College, acknowledging quantitative, qualitative, comparative, progressive, postmodernist, postcolonial, and Afrocentric approaches.

The Academic Program Course Minor

Students must successfully complete Introduction to Black Studies (BLST 015), usually by the end of the sophomore year.

Students must earn a grade-point average of 3.0 or above in black studies coursework in order to be accepted into the program.

Honors Minor

All students participating in the Honors Program are invited to define a minor in the Black Studies Program. Honors minors in black studies must complete a two-credit preparation for their honors portfolio to be submitted to

external examiners. The following two options apply:

1. A two-credit honors thesis written under program supervision (counts as one course toward program requirements), or
2. A two-credit honors seminar approved for black studies credit.

Honors minors must meet all other requirements of the interdisciplinary minor in course.

Requirements and Preparation for Honors Minors

The 2-credit honors thesis must include work done for the interdisciplinary minor and should entail some unifying or integrative principle of coherence. In addition, an honors thesis must also include substantial work (normally 50 percent or more), drawing on a discipline that is outside of the student's major. The Black Studies Committee must approve the proposal for the 2-credit honors thesis, normally during the fall of the student's senior year.

After consultation with the major department, minors may draw on these preparations to enhance or, where appropriate, to integrate their completed or ongoing senior honors study for the major. Work in the Black Studies Program may be represented in the honors portfolio sent to the external examiner by the inclusion of an essay designed to enhance and/or integrate work done in two or more courses, a revised and enriched seminar paper or a term paper from a Black Studies Program course, a video or audio tape of a creative performance activity in dance or music, or other approved creative work.

Special Major

Students preferring more intensive work in black studies are welcome to design a special

Black Studies

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major by consulting with the program's coordinator, usually during the sophomore year.

Thesis / Culminating Exercise

Students may complete a 1-credit course thesis (BLST 091) as part of a black studies minor or special major. Permission will be granted only after consultation with the Black Studies Coordinator and committee. Approval must be secured by the spring of the junior year.

Application Process Notes for the Major or the Minor

Students in any department may add an interdisciplinary minor in the Black Studies Program to their departmental major by fulfilling the requirements stated subsequently. Applications for admission to the black studies interdisciplinary minor should be made in the spring semester of the sophomore year to the program coordinator. All programs must be approved by the Black Studies Committee.

Life After Swarthmore

Students with a background in black studies have pursued a number of paths after graduation. Some have worked in research, or social service organizations, while others have gone directly to graduate school. Many eventually become teachers or professors. Others work in the broadcasting, arts, journalism, international law, business, finance, or in non-governmental organizations. All consider black studies to have been an important part of their liberal arts education.

Courses

Courses in the Black Studies Program are listed below. Courses of independent study, special attachments on subjects relevant to black studies, and courses offered by visiting faculty that are not regularly listed in the catalog may also qualify for credit in the program, subject to the approval of the Black Studies Committee. Students who wish to pursue these possibilities should consult with the program coordinator.

The following courses may be counted for credit in the Black Studies Program. Descriptions of the courses can be found in each department's course listings in this catalog.

Black Studies

BLST 015. Introduction to Black Studies

This course introduces students to the breadth and depth of the discipline in the Black Studies Program, using primary sources. It begins with an examination of current debates that define theory, method, and goals in black studies. It also examines the movement from the more

object-centered Africana studies to subject- and agentic-oriented black studies that occurred as a result of civil rights and anti-colonialist movements in the U.S., Africa, the Caribbean, and Europe. The course examines the challenges that were levied against traditional academic disciplines with the rise of anti-racist scholarship. It briefly examines the conversation between American, Caribbean, and African postcolonialists, and it allows students to delve into some of black studies' most current and exciting scholarship, with a focus on the U.S.

1 credit.

Fall 2012. Johnson.

BLST 040G. Between the "Is" and the "Ought" Black Social and Political Thought

(Cross-listed as SOAN 040G)

Our study of black social and political thought will include not only pivotal scholarly texts, but also the social and political practice and cultural production of abolitionists, maroons, Pan-Africanists, club women, freedom fighters, poets, and the vast array of "race men and women" across the spectrum of crusades. We will explore the range of intellectual and cultural production and protest ideology/action of Blacks through the politics and social observation of the pre-emancipation period, post-emancipation liberation struggles, and the post-colonial and post-civil rights period.

1 credit.

Spring 2013. Johnson.

BLST 059. The Black Freedom Struggle: From Civil Rights to Hip-Hop

(Cross-listed as HIST 059)

This course is devoted to the study of the black efforts to achieve political, social and economic equality within the United States through protest. Students will investigate the links between protest efforts in the era of World War II, the nonviolent and radical phases of the modern civil rights movement and the development of a new culture of protest in the last quarter of the 20th century. In addition to studying historical texts, students will analyze various forms of protest media such as Black Radio Days, cartoons, paintings and plays of 1960s Black Arts Movement and the poems, lyrics, and graphic art of early hip-hop.

1 credit.

Not offered 2012–2013. A. Dorsey.

BLST 091. Thesis

Writing course.

1 credit.

Each semester. Staff.

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BLST 092. Seminar in Black Studies

1 credit.

Not offered 2012–2013.

BLST 093. Directed Reading

1 credit.

Each semester. Staff.

BLST 180. Honors Thesis

2 credits.

Each semester. Staff.

Art

ARTH 021. African-American Art and Identity

ARTH 023. African Art

Dance

DANC 009. Music and Dance of Africa

DANC 021. History of Dance: Africa and Asia

DANC 043. African Dance I

DANC 049. Performance Dance: Repertory,
Section 3: African

DANC 053. African Dance II

DANC 071. Afro-Caribbean Drumming Circle

DANC 078. Dance/Drum Ensemble

Economics

ECON 073. Race, Ethnicity, and Gender in
Economics

ECON 081. Economic Development

ECON 082. The Political Economy of Africa

ECON 171. Labor and Social Economics

ECON 181. Economic Development

Educational Studies

EDUC 067. Identities and Education

EDUC 068. Urban Education

EDUC 167. Identities and Education

English Literature

ENGL 009S. First-Year Seminar: Black
Liberty, Black Literature

ENGL 061. Fictions of Black America

ENGL 062. Black Autobiography

ENGL 068. Black Culture in a “Post-Soul” Era

ENGL 119. Black Cultural Studies Seminar

Film and Media Studies

FMST 059. Re-Envisioning Diaspora

French

FREN 043. Fictions d'enfance

FREN 045. Etudes francophone

FREN 045C. Haïti au féminin FREN 045D. Le
monde francophone: African Cinema

FREN 046. Poésies d'écritures françaises

FREN 053. Littérature et cinema: La pensée
géographiqueFREN 056. Ces femmes qui écrivent/Reading
French Women

FREN 091. Poétique de la mémoire caraïbe

FREN 110. Histories d'Isles

FREN 111. Le Désir colonial: représentations
de la différence dans l'imaginaire français

FREN 114. Théâtre d'écritures françaises

FREN 115. Paroles de femmes

History

HIST 007A. African American History, 1619–
1865HIST 007B. African American History, 1865–
PresentHIST 008A. West Africa in the Era of the Slave
Trade, 1500–1850HIST 008B. Mfecane, Mines, and Mandela:
South Africa From 1650 to the PresentHIST 008C. From Leopold to Kabila: Central
Africa's Bad 20th Century

HIST 051. Black Reconstruction

HIST 053. Black Women in the Civil Rights
MovementsHIST 058. Africa in America: Gullah/Geechee
Life and CultureHIST 059. The Black Freedom Struggle: Civil
Rights to Hip Hop

HIST 085. African Cities and Their History

HIST 086. The Image of Africa

HIST 087. Development and Modern Africa:
Historical Perspectives

HIST 089. Environmental History of Africa

HIST 137. Slavery: 1550–1865

HIST 138. Black Communities in the United
States

HIST 140. The Colonial Encounter in Africa

Linguistics

LING 052. Historical and Comparative
Linguistics

Literatures

LITR 059F. Re-Envisioning Diaspora

LITR 075F. Haïti, the French Antilles, and
Guyane in Translation

Music

MUSI 003. Jazz History

MUSI 003A. Jazz Today: USA, Europe and the
African HeritageMUSI 005B. African Music in a
Transcontinental Context

MUSI 061. Jazz Improvisation

MUSI 071. Afro-Caribbean Drum Circle

MUSI 078. Dance/Drum Ensemble

Philosophy

PHIL 061. Philosophy of Race and Gender

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Political Science

POLS 017. American Political Thought
POLS 033. Race, Ethnicity, and Public Policy
POLS 034. Race, Ethnicity, Representation, and Redistricting in America
POLS 070B. Politics of Punishment (instructor's permission required)
POLS 106. The Urban Underclass and Public Policy (instructor's permission required)

Religion

RELG 010. African American Religions
RELG 024. From Vodun to Voodoo: African Religions in the Old and New Worlds
RELG 025B. Black Women and Religion in the United States
RELG 028B. First-Year Seminar: Religious Radicals: The Religious Socialism of Martin Luther King, Jr. and the Civil rights Movement
RELG 109. Afro-Atlantic Religions

Sociology and Anthropology

SOAN 003F. Culture and Religion in Africa
SOAN 003G. First-Year Seminar: Development and Its Discontents
SOAN 003H. Introduction to Africa
SOAN 007B. Introduction to Race and Ethnicity in the United States
SOAN 007C. Sociology Through African American Women's Writing
SOAN 020B. Urban Education
SOAN 023C. Anthropological Perspectives on Conservation
SOAN 040G. Between the "Is" and the "Ought" Black Social and Political Thought
SOAN 127. Race Theories

Chemistry and Biochemistry

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ROBERT S. PALEY, Professor
 PAUL R. RABLEN, Professor
 THOMAS A. STEPHENSON, Professor ⁴
 KATHLEEN P. HOWARD, Professor and Chair
 STEPHEN T. MILLER, Associate Professor
 ALISON E. HOLLIDAY, Assistant Professor
 LILIYA A. YATSUNYK, Assistant Professor
 JOSH J. NEWBY, Visiting Assistant Professor
 VIRGINIA M. HECK, Senior Lecturer
 MARIA G. NEWPORT, Lecturer
 CAROLINE A. BURKHARD, Laboratory Instructor
 DONNA T. HALLEY, Laboratory Instructor
 LORI P. SONNTAG, Laboratory Instructor

⁴ Absent on administrative leave, 2012–2013.

The objective of the Chemistry and Biochemistry Department is to offer effective training in the fundamental principles and basic techniques of the science and to provide interested students with the opportunity for advanced work in the main sub-disciplines of modern chemistry.

The department offers a course major, honors major, course minor, and honors minor in chemistry. In addition, the department offers the following special majors: in collaboration with the Biology Department, a course major and an honors major in biochemistry; and in collaboration with the Physics and Astronomy Department, a course major and an honors major in chemical physics. We offer teacher certification in chemistry through a program approved by the state of Pennsylvania. For further information about the relevant set of requirements, please refer to the Educational Studies section.

The Academic Program

Course Sequence Recommendations

Students planning a major in chemistry or biochemistry should complete Chemistry 010/010H and 022 during their first year at Swarthmore. During the sophomore year students can take 032 and 038, or 044 and 045, if the physics and mathematics requirements for physical chemistry have been completed. In addition, students planning a major in Biochemistry should complete Biology 001 in their first two years at Swarthmore.

In the last two years, chemistry and biochemistry majors have some flexibility about the sequencing of the remaining requirements for the major. However, students should note that completion of Chemistry 010/010H, 022 and one semester of a 40-level course constitute a minimum set of prerequisites for enrollment in any Chemistry and Biochemistry Department 100-level

seminar. In addition, individual seminars carry additional prerequisites so students should plan ahead accordingly.

Course Major

The course major in chemistry consists of eight required core courses, as well as their mathematics and physics prerequisites, plus a 100-level elective seminar. All majors must complete the senior comprehensive requirement, as described in a later section.

Requirements

CHEM 010/010H	CHEM 022
CHEM 032	CHEM 038
CHEM 043	CHEM 044
CHEM 045	CHEM 046

At least one 100-level seminar

Ancillary Requirements (prerequisites for physical chemistry):

PHYS 003 and PHYS 004/004L (or 007,008)
 MATH 034 (Several-Variable Calculus)

Acceptance Criteria

All applications are reviewed by the entire department. We consider grades in all college-level courses in chemistry, biology, mathematics, and physics. Decisions will not normally be made until Chemistry 022 (Organic Chemistry I) is completed and significant progress has been made towards meeting the physics and mathematics prerequisite requirements for enrollment in physical chemistry. An element in a student's acceptance as a major is our considered judgment of the student's potential for satisfactory performance in advanced course work and fulfillment of the comprehensive requirement.

Course Minor

Requirements

The course minor in chemistry has the following requirements:

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1. The minor consists of five chemistry credits, plus any prerequisites necessary. The chemistry credits must include 010/010H, 022, and 044 and two additional credits, at least one of which must be numbered 40 or higher. Chemistry 001 and research credits (094, 096, 180) may not be used to fulfill the requirements for the minor.
2. At least four of the five credits must be earned at Swarthmore College.
3. The minor will not be entitled anything other than "chemistry." For example, there will be no minor in "organic chemistry" or "physical chemistry," etc.

Acceptance Criteria

Applications are reviewed by the entire department, and decisions are made on the basis of the considered judgment of the faculty.

Honors Major

Requirements

The requirements are the same as for the course major, with the following differences:

1. Honors chemistry majors must take at least two seminars (instead of one). These seminars (and their associated prerequisites) will serve as two of the honors preparations in the major.
2. Honors chemistry majors must write a senior research thesis. The thesis represents the third honors preparation. Preparation for a Research Thesis within an Honors Program consists of enrollment in two credits of Chemistry 180 during the senior year. Except under extraordinary circumstances, students presenting a thesis for external examination will also spend the summer between their junior and senior years on campus initiating their research project.

The Honors Exams for Majors and Preparations

The fields offered by the Chemistry and Biochemistry Department for examination by external examiners as part of the Honors Program are the topics of the 100-level seminars. The department will offer at least three of these preparations (seminars) during each academic year.

All fields in chemistry (except the Research Thesis) will be examined in three hour written examinations prepared by External Examiners. The Honors Research Thesis will be examined orally by the External Examiner chosen in that field. Honors oral exams for other preparations will be conducted by individual Examiners as well.

Acceptance Criteria

Applications are reviewed by the entire department, and decisions are made on the basis of the considered judgment of the faculty. To be admitted as a major in the Honors Program, a

student must present a minimum of two graded courses in chemistry taken at Swarthmore College. In addition, the department looks for indications that the student will participate actively in seminars and can successfully work in an independent manner. To be eligible, no grade in the department may be below a B- and the GPA in chemistry courses should be 3.0 or higher. A student previously accepted into the Honors Program but not maintaining this GPA in chemistry courses might be, by department decision, asked to withdraw from the Honors Program.

Honors Minor

Requirements

The honors minor in chemistry parallels the course minor, except that the program for an honors minor must include a seminar. The seminar serves as the basis of the honors preparation.

The Honors Exam for Minors and Preparations

All of the fields available to majors are available for students wishing to minor in chemistry, with the exception of the Research Thesis. All minors must meet the same prerequisite requirements for seminars established by the Chemistry and Biochemistry Department majors.

Acceptance Criteria

Applications are reviewed by the entire department, and decisions are made on the basis of the considered judgment of the faculty. To be admitted as a minor in the Honors Program in chemistry, a student must present a minimum of two graded courses in chemistry taken at Swarthmore College. In addition, the department looks for indications that the student will participate actively in seminars and can successfully work in an independent manner. To be eligible, no grade in the department may be below a B- and the GPA in chemistry courses should be 3.0 or higher. A student previously accepted into the Honors Program but not maintaining this GPA in chemistry courses might be, by department decision, asked to withdraw from the Honors Program.

Special Major in Biochemistry

The biochemistry major combines work in both the Chemistry and Biochemistry Department and the Biology Department. The requirements for a biochemistry major include all the requirements for a chemistry major plus additional course work in biology.

Requirements

CHEM 010/010H	CHEM 022
CHEM 032	CHEM 038

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CHEM 043

CHEM 044

CHEM 045

CHEM 046

At least one biochemically related 100-level seminar in the Chemistry and Biochemistry Dept. (CHEM 106, 108 or 110)

Ancillary Requirements (prerequisites for physical chemistry):

PHYS 003 and PHYS 004/004L (or 007,008)

MATH 034 (Several-Variable Calculus)

Biochemistry majors must also complete either (1) a biochemically related sophomore-level Biology course (with lab) and a biochemically related advanced Biology seminar (with lab) or (2) two biochemically related, sophomore-level biology courses (with labs).

Biochemistry-related courses offered in the Biology Department include: BIOL 010 (Genetics), BIOL 014 (Cell Biology), BIOL 016 (Microbiology), BIOL 017 (Microbial Pathogenesis and the Immune Response), BIOL 020 (Animal Physiology), BIOL 022 (Neurobiology), BIOL 024 (Developmental Biology) and BIOL 025 (Plant Biology). Please note the biology prerequisites for these courses and plan accordingly.

Biochemistry-related seminars offered in the Biology Department include: BIOL 110 (Human Genetics), BIOL 111 (Developmental Genetics), BIOL 114 (Symbiotic Interactions), BIOL 115 (Plant Developmental Biology), BIOL 116 (Microbial Processes and Biotechnology), BIOL 123 (Learning and Memory), and BIOL 124 (Hormones and Behavior). Please note the biology prerequisites for these courses and plan accordingly.

Comprehensive Requirement

The comprehensive requirement for biochemistry majors is the same as for chemistry majors.

Acceptance Criteria

Acceptance criteria are the same as for chemistry majors.

Requirements for Honors Major in Biochemistry

The honors biochemistry major has the same set of requirements as the course biochemistry major, plus the requirement of four honors preparations in at least two departments must also be met, as follows

1. Topics in Biochemistry (CHEM 108) or Biophysical Chemistry (CHEM 110) or Bioinorganic Chemistry (CHEM 106).
2. One biochemically oriented preparation from the Biology Department.
3. A two-credit biochemically oriented Research Thesis carried out under the supervision of faculty from the Chemistry and/or Biology Departments.

4. One additional preparation chosen from the Chemistry and Biochemistry Department or from biochemically related preparations offered by either the biology or psychology departments.

Special Major in Chemical Physics

The chemical physics major combines course work in chemistry and physics at the introductory and intermediate levels, along with some advanced work in physical chemistry and physics, for a total of between 10 and 12 credits. Laboratory work at the advanced level in either chemistry or physics is required; math courses in linear algebra and multivariable calculus are prerequisites to this work.

Requirements

In preparation for a major in chemical physics, students must complete by the end of the sophomore year: (1) CHEM 010/010H and 022; (2) PHYS 005, 007, 008 (PHYS 003, 004 can substitute, but the 005, 007, 008 sequence is strongly recommended); (3) further work appropriate to the major in either CHEM (044, 045, 043, and/or 046) or PHYS (014 and 050); (4) MATH 034. A chemical physics major will ordinarily include both semesters of physical chemistry (CHEM 044 and 045). A student may satisfy the requirement for laboratory work at the advanced level by completing a research thesis (CHEM 096 or 180), but in the absence of a research thesis, the major must include CHEM 043 or 046 or PHYS 082 in order to satisfy the requirement.

Example of a special major in chemical physics: CHEM 022, 043, 044, 045, 046, 105; PHYS 007, 008, 014, 050, 111, 113.

Comprehensive Requirement

The comprehensive requirement for chemical physics majors is the same as for chemistry majors. Occasionally, however, and on a case-by-case basis, the department is willing to negotiate a "hybrid" colloquium series for students completing a chemical physics special major. In consultation with both departments (chemistry and biochemistry and physics and astronomy), the student may draw up a list of colloquia pertinent to the special major and taken partly from the colloquium series of *each* department, and then participate in only these colloquia. However, in no event will the total number of talks for the year amount to fewer than the number of colloquia scheduled for the Chemistry and Biochemistry series.

Acceptance Criteria

Acceptance criteria are the same as for chemistry majors, except that the faculty of both the chemistry and biochemistry and

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physics and astronomy departments are actively involved in the decision.

Requirements for Honors Major in Chemical Physics

The honors chemical physics major has the same set of requirements as the course chemical physics major, plus the requirement of four Honors Preparations in at least two departments must also be met, as follows:

1. One preparation (seminar) chosen from the Chemistry and Biochemistry Department.
2. One preparation (seminar) chosen from the Physics and Astronomy Department.
3. A two-credit Research Thesis carried out under the supervision of faculty from the Chemistry and/or Physics Departments.
4. One additional preparation chosen from the Chemistry and Biochemistry Department or from the Physics and Astronomy Department.

Thesis / Culminating Exercise

Comprehensive Requirement

The senior comprehensive requirement in the Chemistry and Biochemistry Department consists of two components.

The first component revolves around the department's Colloquium Series. During the academic year, speakers from other institutions visit our campus and present colloquia about their research. Each speaker recommends a small amount of published background material, which students and faculty read in preparation for the visit. These materials also serve as the basis for a "preview session," during which a small group of students presents background and context for the speaker's research. All senior majors are required to (1) attend the preview sessions, (2) review the suggested readings, (3) participate as a presenter in at least one preview session during the year, and (4) attend the colloquium presentations themselves.

The department offers two routes for satisfying the second component of the comprehensive requirement:

- a. Completion of a two-credit research thesis. The thesis must be based on research carried out during the senior year and, in most cases, the preceding summer as well. Honors majors must choose this option.
- b. Senior majors who do not write a research thesis must take a series of short exams administered throughout the academic year. These exams are based on the presentations made by speakers in the department's Colloquium Series and the literature readings that the speakers suggest. The following regulations will govern the exams:

1. The department will administer a minimum of 8 exams during each academic year.
2. An exam will generally be administered during the week following a speaker's presentation.
3. The exams will be designed such that prepared students should be able to answer the question(s) in 60 minutes or less.
4. Satisfactory performance on any 5 of the exams constitutes completion of this component of the comprehensive requirement.

Advanced Placement/International Baccalaureate Credit

Students with a score of 5 on the Chemistry AP exam (taken their junior year in high school or later) or a score of 6 or 7 on the Higher Chemistry IB exam are given the option of placement into Honors General Chemistry (Chemistry 10H). First year students can use the Chemistry Placement Exam to place into Chemistry 10H in the absence of an AP/IB score.

Transfer Credit

It is sometimes possible to receive Swarthmore credit for chemistry courses taken at other colleges and universities. If you wish to take a chemistry course on another campus and to receive Swarthmore credit for doing so, it is essential that you follow the proper procedure and that you plan in advance. It is also important to realize that not all courses will be eligible for credit. See the departmental website for details.

Off-Campus Study

The Chemistry and Biochemistry Department is eager to accommodate the study abroad aspirations of chemistry and biochemistry majors. However, substantial advance planning is required and interested students are encouraged to plan their Sophomore Plan carefully and consult with their academic adviser.

Research

The Chemistry and Biochemistry Department offers opportunities for students to engage in collaborative research with faculty members. Each fall semester, the department hosts a series of short presentations by faculty members, outlining the research projects available. This meeting, normally held in November, serves as the starting point for student participation in research during the following summer and/or academic year.

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Academic Year Opportunities

The Department of Chemistry and Biochemistry offers three ways for students to engage in supervised research for academic credit, during the academic year:

- CHEM 094 (research project). Students may enroll in this course for either a half credit or a full credit. A half credit implies a time commitment of 5–7 hours per week, while a full credit implies a time commitment of 10–15 hours per week.
- CHEM 096 (research thesis). A full year (two credits) of CHEM 096 corresponds to a research thesis for course majors.
- CHEM 180 (honors research thesis). A full year (two credits) of CHEM 180 corresponds to a research thesis for honors majors.

All students who enroll for at least one full credit of research during an academic year are required to participate in the department's Colloquium Series and present a poster sometime during the academic year.

Research Conducted in Other Departments

Students writing a research thesis as part of their plan to satisfy the comprehensive requirement in a chemistry, biochemistry, or chemical physics major (see above) sometimes elect to carry out their research with a faculty member in an allied department, such as biology, physics and astronomy, or engineering. In general, such students have two options for how to register for courses corresponding to the thesis:

- Option 1: Use the appropriate chemistry courses (two credits of CHEM 096 for a course thesis, or two credits of CHEM 180 for an honors thesis).
- Option 2: Use the course designations appropriate to the department in which the research is conducted. For research conducted with a biology faculty member, for instance, a student might enroll in one credit of BIOL 180 and one credit of BIOL 199 over the course of the senior year. The thesis must ultimately consist of at least two full credits.

American Chemical Society Certification

Certification by the American Chemical Society (ACS) is useful for those who intend to pursue a career in chemical industry. In addition to the minimum chemistry major requirements, certification requires a second seminar and a research thesis through a full year of CHEM 096 or 180.

Courses

CHEM 001. Chemistry in Context: Applying Chemistry to Society

This course covers a series of real-world issues with significant chemical content. Topics will be drawn from areas such as environmental chemistry, energy sources, materials, and human health. The course seeks to develop in students the ability to make informed decisions about issues that intersect with technology. Students may not receive credit for CHEM 001 if they have previously received credit for CHEM 010 or CHEM 010H.

One laboratory period every second week.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Holliday.

CHEM 010. General Chemistry

A study of the general concepts and basic principles of chemistry, including atomic and molecular structure, bonding theory, molecular interactions, and the role of energy in chemical reactions. Applications will be drawn from current issues in fields such as environmental, biological, polymer, and transition metal chemistry. CHEM 010 is the normal point of entry for the chemistry and biochemistry curriculum.

One laboratory period weekly.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Newby.

CHEM 010H. General Chemistry Honors Course

Topics will be drawn from the traditional general chemistry curriculum but discussed in greater detail and with a higher degree of mathematical rigor. Special emphasis will be placed on the correlation of molecular structure and reactivity, with examples drawn from such fields as biological, transition metal, organic, polymer, and environmental chemistry. Some familiarity with elementary calculus concepts will be assumed.

Can only be taken as either a first or second year student.

One laboratory period weekly.

Prerequisite: A score of 5 on the Advanced Placement Chemistry Examination taken junior year in high school or later, a score of at least 6 on the International Baccalaureate advanced (higher level) chemistry examination or by performance on the departmental placement examination given the week prior to the start of classes of a student's first-year at Swarthmore.

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Natural sciences and engineering practicum.
1 credit.

Fall 2012. Yatsunyk.

CHEM 022. Organic Chemistry I

An introduction to the chemistry of some of the more important classes of organic compounds; nomenclature, structure, physical and spectroscopic properties; methods of preparation; and reactions of aliphatic and aromatic hydrocarbons, halides, and monofunctional oxygen compounds, with an emphasis on ionic reaction mechanisms.

One laboratory period weekly.

Prerequisite: CHEM 010 or CHEM 010H.

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Rablen.

CHEM 032. Organic Chemistry II

A continuation of CHEM 022 with emphasis on more advanced aspects of the chemistry of monofunctional and polyfunctional organic compounds, multistep methods of synthesis, and an introduction to bio-organic chemistry.

One laboratory period weekly.

Prerequisite: CHEM 022.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Paley.

CHEM 038. Biological Chemistry

An introduction to the chemistry of living systems: protein conformation, principles of biochemical preparation techniques, enzyme mechanisms and kinetics, bioenergetics, intermediary metabolism, and molecular genetics.

One laboratory period weekly.

Prerequisite: CHEM 032.

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Miller.

CHEM 043. Analytical Methods and Instrumentation

An introduction to the techniques and instrumentation used for the separation, identification, and quantification of chemical species. Special emphasis will be placed on the means to select a technique and how to interpret and evaluate the resulting data. Topics will include sampling, statistical analysis, spectroscopy, mass spectrometry, and separation methods.

One laboratory period weekly.

Prerequisites: CHEM 022 plus two more semesters of college-level laboratory work in chemistry; at the discretion of the instructor, a

semester of laboratory work in another discipline may substitute for one of the required semesters of chemistry laboratory.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Holliday.

CHEM 044. Physical Chemistry: Atoms, Molecules and Spectroscopy

A quantitative approach to the description of structure in chemical and biochemical systems. Topics will include introductory quantum mechanics, atomic/molecular structure, a range of spectroscopic methods and statistical mechanics. Systems of interest will range from gas-phase single molecules to condensed-phase macromolecular assemblies.

One laboratory period weekly.

Prerequisites: CHEM 010/010H; MATH 25 (or equivalent); and PHYS 003 and 004 (or 003, 004L, or 007, 008). Prior enrollment in MATH 034 (or equivalent) is recommended.

Natural sciences and engineering practicum.
1 credit.

Fall 2012. Howard.

CHEM 045. Physical Chemistry: Energy and Change

A quantitative approach to the role that energy and entropy play in chemical and biochemical systems. Topics include states of matter, the laws of thermodynamics, chemical equilibria, electrochemistry, the thermodynamics of solutions and phases and chemical kinetics/dynamics. Examples will be drawn from both real and ideal systems in chemistry and biochemistry.

One laboratory period weekly.

Prerequisites: CHEM 010/010H; PHYS 003, 004 (or 003, 004L, or 007, 008) and MATH 034 (or equivalent).

Natural sciences and engineering practicum.
1 credit.

Spring 2013. Newby.

CHEM 046. Inorganic Chemistry

A study of the structure, bonding, and reactivity of inorganic compounds with emphasis on the transition metals. Included in the syllabus are discussions of crystal and ligand field theories, organometallic chemistry, and bioinorganic chemistry. The laboratory component emphasizes the synthesis, spectroscopy, and magnetic properties of transition metal complexes including organometallic substances and ones of biochemical interest.

One laboratory period weekly.

Prerequisite: Four semesters of college chemistry with laboratory.

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Natural sciences and engineering practicum.
1 credit.

Spring 2013. Yatsunyk.

Seminars

Students should note that completion of CHEM 010/010H/ 022, and one semester of a 40-level course constitute a minimum set of prerequisites for enrollment in any Chemistry and Biochemistry Department seminar. In unusual circumstances, the department will consider whether completion of work of comparable sophistication in another department can substitute for the requirement that a 40-level chemistry course be completed prior to enrollment in a seminar. Individual seminars carry additional prerequisites, as listed here.

CHEM 102. Topics in Organic Chemistry

This course will address selected advanced topics of current interest in the field of synthetic organic chemistry. Material will largely be drawn from the current research literature and will likely include such topics as the applications of stoichiometric and catalytic organometallic chemistry, the control of relative and absolute stereochemistry, the use of "organocatalysts," and carbohydrates. The total synthesis of architecturally challenging natural products will serve to highlight the application of these technologies.

Additional prerequisite: CHEM 032, CHEM 044, 045 or 046.

1 credit.

Spring 2013. Paley.

CHEM 103. Topics in Environmental Chemistry

This course will focus on the use of fundamental chemical principles to understand the source, distribution, impact, and possible remediation of anthropogenic pollutants in the environment. Discussions will center on environmental issues raised in both popular media and current scientific literature. Topics may include air pollution, greenhouse gases, ozone depletion, acid rain, and water and soil pollutants, such as heavy metals and pesticides. Additional prerequisite: CHEM 043.

1 credit.

Spring 2013. Holliday.

CHEM 105. Quantum Chemistry and Spectroscopy

Advanced consideration of topics in quantum mechanics including the harmonic oscillator, angular momentum, perturbation theory, and electron spin. These concepts, along with molecular symmetry and group theory, will be

applied to the study of atomic and molecular spectroscopy.

Additional prerequisite: CHEM 044, MATH 34 (or equivalent). Some familiarity with linear algebra will be useful.

1 credit.

Not offered 2012–2013.

CHEM 106. Topics in Bioinorganic Chemistry

This seminar will start with a brief review of the basic principles of inorganic and biological chemistry as well as an overview of relevant biophysical techniques. Materials will be drawn largely from the primary literature. Students will be challenged to read and evaluate scientific papers critically. The main topics of this course will have to do with the function and coordination of metals in biological systems: important cofactors and metal clusters that carry out catalysis and electron transfer reactions, metal homeostasis, metals in medicine, and the importance of inorganic model compounds to understand the function of biological systems.

Additional prerequisites: CHEM 038 and CHEM 046.

1 credit.

Not offered 2012–2013.

CHEM 108. Topics in Biochemistry

Physical methods used to study high-resolution biomacromolecular structure will be discussed, using examples from the primary literature. Techniques used to measure the forces stabilizing intramolecular and intermolecular interactions and their application to proteins will be included.

Recent developments in the rational design of ligands for biological receptors, based on results from the physical methods described previously, will be used to highlight the importance of diverse approaches to the study of biomolecular recognition.

Additional prerequisites: CHEM 038, CHEM 044 or 045.

1 credit.

Fall 2012. Miller.

CHEM 110. Topics in Biophysical Chemistry

An introduction to the interdisciplinary field of biophysical chemistry in which biological systems are explored using the quantitative perspective of the physical scientist.

Prerequisite: CHEM 038, CHEM 044 or 045

1 credit.

Not offered 2012–2013.

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Student Research

All students who enroll in one or more research courses during the academic year are required to participate in the department's colloquium series and present the results of their work at a poster session during the academic year.

CHEM 094. Research Project

This course provides the opportunity for qualified students to participate in research with individual faculty members. Students who propose to take this course should consult with the faculty during the preceding semester concerning areas under study. This course may be elected more than once. Students may enroll in this course for either a half credit or a full credit. A half credit implies a time commitment of 5–7 hours per week, while a full credit implies a time commitment of 10–15 hours per week.

0.5 or 1 credit.

Each semester. Staff.

CHEM 096. Research Thesis

Chemistry and biochemistry majors will be provided with an option of writing a senior research thesis as part of their comprehensive requirement. Thesis students are strongly urged to participate in on-campus research during the summer between their junior and senior years. A minimum of 2 credits of CHEM 096 must be taken during the last three semesters of the student's residence at Swarthmore.

1 credit.

Each semester. Staff.

CHEM 180. Honors Research Thesis

An opportunity for students in the External Examination Program to participate in research with individual faculty members. The thesis topic must be chosen in consultation with a member of the faculty and approved early in the semester preceding the one in which the work is to be done. A minimum of 2 credits of CHEM 180 must be taken during the last three semesters of the student's residence at Swarthmore.

1 credit.

Each semester. Staff.

Classics

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ROSARIA V. MUNSON, Professor
 WILLIAM N. TURPIN, Professor and Chair
 GRACE M. LEDBETTER, Associate Professor
 SETH BERNARD, Visiting Assistant Professor
 JEREMY LEFKOWITZ, Assistant Professor³
 DEBORAH SLOMAN, Administrative Assistant

³ Absent on leave, 2012–2013.

The field of Classics is devoted to the study of the cultures of the ancient Greeks and Romans. The curriculum includes training in the Greek and Latin languages at the Elementary, Intermediate, and Seminar levels. In addition, the department offers a range of courses on the history, literature, philosophy, religion, and cultural life of antiquity, including classes that explore the reception of the Classical past in later periods up to the present day. The rigorous training in Greek and Latin that is the hallmark of Swarthmore's Classics program has meant that the department enjoys remarkable success in producing students who go on to become leaders in the field. But because it is a truly interdisciplinary field, Classics also appeals to students with a wide variety of interests and career goals.

The Academic Program

Greek, Latin, Ancient History, and Classical Studies may be a major or minor subject in either the Course or the Honors Program. Three of these majors (Greek, Latin, and Ancient History) require advanced work in one of the original languages, while a major or minor in Classical Studies and a minor in Ancient History do not require language study. Acceptance into one of the majors is dependent on promising work in relevant courses (normally indicated by A's and B's).

Course Major

Greek: 8.5 credits required, including 0.5-credit senior course study (see below). Two credits must come from an honors seminar in Greek.

Latin: 8.5 credits required, including 0.5-credit senior course study (see below). Two credits must come from an honors seminar in Latin.

Classical Studies: 8.5 credits in Classics, Greek, or Latin, including 0.5-credit senior course study (see below). Two credits must come from an honors seminar in Classical Studies. Other disciplines on campus offer courses focused on aspects of classical antiquity (e.g. Art History, Philosophy, Political Science), and usually these will count toward completion of the major; students are advised to consult the chair for an accurate list of such courses.

Ancient History: A major in ancient history consists of four ancient history courses (CLAS 031, 032, 042, 044, 056, or 066), four credits in Greek or Latin, two of which must be from an honors seminar, and 0.5-credit senior course study. A second seminar in Latin or Greek can be substituted for two ancient history courses.

Course Minor

Greek: 5 credits in Greek.

Latin: 5 credits in Latin.

Classical Studies: 5 credits in Classics, Greek, or Latin.

Ancient History: A course minor in ancient history will consist of four courses in ancient history, and an attachment to one of them. That attachment will be presented to members of the department for evaluation and oral examination.

Culminating Exercise/Senior Course Study

The culminating experience for course majors in Greek, Latin, Ancient History, and Classical Studies, is a 0.5-credit senior course study. This independent study will be taken in the senior year to prepare for a graded oral exam taken in the spring with the Classics faculty. The oral exam will be based on a 2-credit seminar the student has completed. The student will submit her final exam and a paper from the seminar, which may be revised. The oral exam focuses on the seminar as a whole as well as on the paper and written exam submitted.

Honors Program in Classics

Greek and Latin: For a major in Greek or Latin, preparation for honors exams will normally consist of three seminars; students may take a fourth seminar in the major, but not for external examination. A student minoring in Greek or Latin will take one external examination based on one seminar. Minors are, however, strongly encouraged to take more than one seminar, in order to be adequately prepared for the examination.

Classical Studies: Honors majors will complete 8 credits in Classics, Greek, or Latin, including three 2-credit seminars, of which at least one

Classics

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must be a Classical Studies seminar. A course + attachment may be substituted with permission of the department. Minors will complete 5 credits in Classics, Greek, or Latin, including one 2-credit Classical Studies seminar.

Ancient History: For a major in Ancient History, one preparation will be a seminar in either Latin or Greek. The other two preparations can be another seminar in the same language and a course-plus-attachment, or two courses-plus-attachments. Students minoring in ancient history will take three courses in ancient history and add an attachment to one of them. That course-plus-attachment will be the preparation for the external exam. No ancient language is required for this minor.

All honors majors and minors will select one paper from each seminar to be sent to the external examiner for that seminar. The student is free to submit the paper with minor or major revisions or no revisions at all. The department suggests a word limit of 2,000–3,000 words as an appropriate guideline (4,000 words is the senior honors limit set by the College). Majors will, therefore, submit three such papers, and minors will submit one. Senior Honors Study is not required for students whose Honors preparation is a course with an attachment. The portfolio sent to external examiners will contain the seminar papers, together with syllabi and related materials, if any, from the instructors. A combination of (three-hour) written and (one-hour) oral exams will be the mode of external assessment for seminars. For course-plus-attachment, examiners will receive the course syllabus and the written product of the attachment. The exam will be just an oral assessment.

Advanced Placement/International Baccalaureate Credit

The department will grant one credit for one or more grades of 5 on the Latin AP, or the IB equivalent.

Off-Campus Study

A semester of off-campus study is usually possible for majors in classics. The department is a member of the Intercollegiate Center for Classical Studies in Rome, and encourages students in their junior year to participate, preferably in the fall semester. The ICCS program offers traditional courses in Greek, Latin, Italian and renaissance and baroque art history, and a required two-credit course based on first-hand exposure to the archaeological and artistic monuments of the ancient world to be found in Rome, the Bay of Naples, and Sicily.

Research and Summer Study

The department often sponsors students in independent summer research, often in cooperation with a faculty member. It regularly supports the summer study of Latin and Greek at other institutions, especially at the intermediate and introductory levels. In particular our students have had success with intensive summer courses in elementary Latin and Greek at Berkeley, CUNY, and University College, Cork, Ireland. The department has also supported students participating in archeological excavations of classical sites, including in recent years the Anglo-American Project at Pompeii and the SMU / Franklin and Marshall field school at Poggio Colla in Tuscany.

Life After Swarthmore

Many of our majors, and some minors, go on to pursue careers as professional classicists, at both the college and secondary levels. Swarthmore students well prepared in both Latin and Greek are competitive candidates for excellent graduate programs in classics, and in related fields such as medieval studies, English, history, and archaeology. In recent years Classics majors have been admitted to graduate programs at UNC-Chapel Hill, Penn, CUNY Graduate Center, Yale, Harvard, Princeton, University of Chicago, and Stanford. Others have successfully obtained teaching positions in secondary schools, both public and private; it is worth mentioning that there is a significant demand for teachers of Latin, particularly at the secondary level, and some states, including Pennsylvania, make it possible to teach Latin in public schools before obtaining professional certification. Most majors and minors have successfully pursued careers only tangentially related to classics, often after attending professional school. There are Swarthmore classicists in law, medicine, business, art, and music, and many other walks of life.

Greek

GREK 001–002. Intensive First-Year Greek

Students learn the basics of the language and are introduced to the culture and thought of the Greeks. The course provides a selection of readings from the most important Greek authors, including Herodotus, Thucydides, Sophocles, Euripides, and Plato. The course meets four times a week and carries 1.5 credits each semester. Students who start in the GREK 001–002 sequence must pass GREK 002 to receive credit for GREK 001.

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Humanities. 1.5 credits.

Year-long course.

Fall 2012. Turpin, Munson. Spring 2013. Bernard, Ledbetter.

GREK 011. Plato and Socratic Irony

This course will focus on one or more of the Socratic dialogues of Plato, such as the *Euthyphro*, *Republic I*, or selections from the *Phaedo* or the *Symposium*. Emphasis will be placed on the development of skill in reading and composing Greek but also on analysis of the characteristics and techniques of the Platonic dialogue form and Plato's philosophy. We will split our time between critical reading of sections of the dialogues; grammar, syntax, and vocabulary review; and discussion of topics touched on in the texts. GREK 011 is normally taken after GREK 002.

Humanities. 1 credit.

Fall 2012. Turpin.

GREK 012. Homer's *Iliad*

This course examines the literary, historical, and linguistic significance of Homer's *Iliad*. Selections from the poem are read in Greek and the entire poem is read in translation.

Humanities. 1 credit.

Spring 2013. Munson.

GREK 093. Directed Reading

Independent work for advanced students under the supervision of an instructor.

Humanities. 1 credit.

Latin

LATN 001–002. Intensive First-Year Latin

Students learn the basics of the language, with readings drawn from Plautus, Cicero, Sallus, Martial, the emperor Augustus, and Catullus. The course meets four times a week and carries 1.5 credits each semester.

Students must pass LATN 002 to receive credit for LATN 001.

Humanities. 1.5 credits each semester.

Year-long course.

Fall 2012. Munson, Turpin. Spring 2013. Ledbetter, Bernard.

LATN 013. Tradition and Transformation in the Roman Empire

Selected readings by the poet Ovid. Topics will include the range of poetic genres in which Ovid wrote, the characteristics of his writing that remain stable across these different genres, and Ovid's relationship to the history and culture of the time in which he lived.

Prerequisite: LATN 011 or its equivalent.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 014. Medieval Latin

Readings are chosen from the principal types of medieval Latin literature, including religious and secular poetry, history and chronicles, saints' lives, satire, philosophy, and romances.

Prerequisite: LATN 011 or its equivalent.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 015. Pleasure and Virtue in Rome

Selected readings in the Latin poetry of love and death. Authors may include Propertius, Tibullus, Sulpicia, and Ovid as well as some of the later elegists.

Prerequisite: LATN 011 or its equivalent.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 017. Latin Poetry and the Modernists

This course explores Latin poems influential in the creation of the modernist verse of, in particular, Ezra Pound and T.S. Eliot. The Latin texts are read in the original, for their own sake and in their own context. But we also explore the readings given them by the modernists, in an attempt to assess the uses and importance of their common literary tradition.

Prerequisite: LATN 011 or its equivalent.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 019. Roman Imperial Literature

This course will consider selected poetry or prose from the Roman imperial period. Authors may include Vergil, Ovid, Seneca, Juvenal, Tacitus, or others. The course is appropriate for students who have done at least one college Latin course at the intermediate level and for some students who have done college-level Latin in high school. Students with no previous Latin courses at the college level should consult the department chair before enrolling.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 021. Republican and Augustan Latin Literature

We will read selections from Latin prose authors, particularly those associated with the civil war and the rise of the Augustan principate. Typical authors include Cicero, Caesar, Sallust, Livy, and Augustus himself. The course will view its texts in the context of both political and literary history.

Humanities. 1 credit.

Spring 2013. Bernard.

LATN 023. The Roman Novel

This course focuses on Petronius' *Satyricon* and/or Apuleius' *Golden Ass*. Besides reading

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extensively from the works themselves, we will consider what the genre “novel” means in Latin, what these works have to tell us about Roman society and language, and various other topics arising from the novels and from contemporary scholarship about them.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 024. Latin Poetry and the Roman Revolution

The transformation of the Roman Republic into the monarchy of Augustus and the emperors was accompanied by a similar transformation in Roman poetry. In place of the staunch independence of Lucretius and the outrageous irreverence of Catullus, the new poets Propertius, Horace, and Vergil wrote poetry that responded directly or indirectly to the new political world. This course will explore one or more of these poets in depth, both within their political context and within the broader literary tradition. Students will read modern scholarly criticism, and develop their own critical approaches to writing about Latin poetry. They will also review basic Latin morphology and syntax, and build a stronger Latin vocabulary. The course is suitable for those with 3–4 years of High School Latin, or 1–2 years of Latin in college.

Writing course.

Humanities. 1 credit.

Fall 2012. Turpin.

LATN 025. Latin Poetry and the English Renaissance

Ben Jonson said that Shakespeare had “small Latin and less Greek,” but all products of the Elizabethan grammar schools were steeped in Latin literature. This course will explore some of their seminal Latin texts, including Ovid’s *Amores*; Horace’s *Odes*, and Vergil’s *Eclogues*. We will also read some of the English poems most directly influenced by these Latin works, by poets such as Donne, Spenser, Marvell, Lovelace, Herrick, Rochester, and Milton.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

LATN 093. Directed Reading

Independent work for advanced students under the supervision of an instructor.

Humanities. 1 credit.

Ancient History

All of the courses in ancient history are distributions in social sciences. They also count as prerequisites for advanced courses in the History Department and as part of a major in history.

CLAS 016. First-Year Seminar: Augustus and Rome

The great-nephew and adopted son of Julius Caesar rose to sole power in Rome after a series of civil wars culminating in the defeat of Antony and Cleopatra. He, along with his wife Livia, transformed Rome by creating a monarchical system that hid the real power behind the traditional institutions of the Roman republic. The process was supported and explained by a unique program of literary, artistic, and architectural revival. Ancient authors to be read (in English) may include Augustus himself, Livy, Vergil, Horace, Propertius and Ovid; we will also study the artistic and architectural projects that helped to communicate the ideologies of the new regime.

Writing course.

Social sciences. 1 credit.

Fall 2012. Bernard.

CLAS 031. The Greeks and the Persian Empire

This course studies the political and social history of Greece from the Trojan War to the Persian Wars. We will examine the connections between Greeks and non-Greeks and their perceptions of mutual differences and similarities. Readings include Homer, Hesiod, the lyric poets (including Sappho), and Herodotus and Near Eastern documents.

Writing course.

Social sciences. 1 credit.

Fall 2012. Bernard.

CLAS 032. The Roman Republic

This course studies Rome from its origins to the civil wars and the establishment of the principate of Augustus (753–27 B.C.E.). Topics include the legends of Rome’s foundation and of its republican constitution; the conquest of the Mediterranean world, with special attention to the causes and pretexts for imperialism; the political system of the Late Republic, and its collapse into civil war.

Writing course.

Social sciences. 1 credit.

Not offered 2012–2013.

CLAS 042. Democratic Athens

Using diverse primary sources (Thucydides’ *Histories*, tragedy, comedy, and others), this course explores several aspects of classical Athenian culture: democratic institutions and ideology, social structure, religion, intellectual trends, and the major historical events that affected all of these and shaped the Greek world in the fifth and early fourth centuries B.C.E.

Writing course.

Social sciences. 1 credit.

Not offered 2012–2013.

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CLAS 044. The Early Roman Empire

A detailed study of the political, economic, social, and cultural history of the Roman world from the fall of the Republic through the Antonine Age (50 B.C.E.–C.E. 192). Ancient authors read include Petronius; Apuleius; Suetonius; and, above all, Tacitus.

Writing course.

Social sciences. 1 credit.

Not offered 2012–2013.

CLAS 045. Cities of the Ancient Mediterranean.

Athens, Rome, Jerusalem, Alexandria, Constantinople, Venice: the cities ringing the Mediterranean Sea hold a dominant place in the historical perception and cultural imagination of the region. This course considers the role of these cities within their historical context, from around 2000 BCE to 1000 CE, considering such questions as: What characteristics distinguish the Mediterranean city? What led to the rise and decline of particular cities? What was urban life and death like? How did urban centers function within the greater networks of economic, cultural, and political interaction? We will consider both the most important literary and documentary sources, as well as the archaeological evidence offered by art, architecture and material culture more generally.

Social sciences. 1 credit.

Spring 2013. Bernard.

CLAS 056. Pagans and Christians in the Roman Empire

This course considers the rise of Christianity and its encounters with the religious and political institutions of the Roman Empire. It examines Christianity in the second and third centuries of the Common Era and its relationship with Judaism, Hellenistic philosophies, state cults, and mystery religions and concentrates on the various pagan responses to Christianity from conversion to persecution. Ancient texts may include Apuleius, Lucian, Marcus Aurelius, Porphyry, Justin, Origen, Lactantius, Tertullian, and the *Acts of the Christian Martyrs*.

No prerequisite exists, though CLAS 044 (Early Roman Empire) and RELG 004 (New Testament and Early Christianity) provide useful background.

Writing course.

Social sciences. 1 credit.

Not offered 2012–2013.

CLAS 066. Rome and Late Antiquity

This course will consider the history of the Roman Empire from its near collapse in the third century C.E. through the “conversion” of

Constantine and the foundation of Constantinople to the sack of Rome by Alaric the Visigoth in 410 C.E. Topics will include the social, political, and military aspects of this struggle for survival as well as the religious and cultural conflicts between pagans and the Christian church and within the Church itself.

Principal authors will include Eusebius, Athanasius, Julian the Apostate, Ammianus Marcellinus, Ambrose, and Augustine.

Writing course.

Social sciences. 1 credit.

Not offered 2012–2013.

CLAS 093. Directed Reading

Independent work for advanced students under the supervision of an instructor.

Social sciences. 1 credit.

Literature in Translation

CLAS 011. First-Year Seminar: Philadelphia: Athens of America

This first-year seminar investigates the presence of the classical past in the city of Philadelphia. In the formative years after American independence, a golden age of artistic and cultural achievement in Philadelphia earned the city its reputation as the “Athens of America.” Our focus in this course will be on the early national period (1790–1840), during which classical antiquity surfaces repeatedly as a benchmark and incitement in the social and intellectual development of Philadelphia. The uses of the classical past are not limited to unthinking or servile dependence on outdated models; rather, the Philadelphian and, more broadly, American engagement with the civilizations of Greece and Rome has more often been a complex, fraught, and often radical enterprise. We will explore the contestation of the classical past as reflected in the domains of Philadelphia-based architecture, theater, education, city planning, political debates, and the visual and decorative arts.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 013. First-Year Seminar: Mythology

This course examines selected myths in such major works of Greek and Latin literature as Homer’s *Iliad* and *Odyssey*, the tragedies of Aeschylus, Sophocles, and Euripides, Virgil’s *Aeneid*, and Ovid’s *Metamorphoses*. Specific texts and images are treated both as individual stories and in relation to other texts and images that tell the same mythological tale. Primary texts are supplemented by modern theoretical readings in gender, psychology, and literary theory.

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Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 014. First-Year Seminar: Mystery Religions and the Greek Philosophers

What do ancient mystery religions teach us about spiritual transformation and contact with the divine? What were the secret rites of these religions? How do their mythological themes have universal value? Why are the language and themes of mystery traditions so central to the philosophical thought of Parmenides, Empedocles, and Plato? This seminar will study texts associated with Orphism, Pythagoreanism, the Eleusinian and Dionysian mystery cults, Isis and Osiris, and Presocratic and Platonic philosophy. Readings may include *The Homeric Hymn to Demeter*; Euripides' *Bacchae*; fragments of Parmenides and Empedocles; the Derveni Papyrus; Plato's *Phaedo*, *Symposium*, and *Phaedrus*; and Apuleius' *Golden Ass*. Topics discussed will include cosmology, mystical knowledge/ascent; philosophical method; allegorical interpretation; immortality of the soul; archetypal figures of mother/daughter and rebirth.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 015. First-Year Seminar: Dante

With Virgil, Beatrice, and Dante-poet as guides, we shall follow the Pilgrim on a journey of despair, hope, and redemption. We shall read the *Divine Comedy* in its entirety, teasing out the poem's different levels of meaning and reconstructing Dante's world view in the context of Medieval culture: his thought on life, death, love, art, politics, history and God.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 019. First-Year Seminar: The Birth of Comedy

Investigate the origins of comedy in antiquity through a selection of plays by the four surviving comedians (Aristophanes, Menander, Plautus, Terence) along with a survey of comic theory, both ancient and modern. The history of the genre, its evolution, conditions of performance, and its cultural context will also be addressed, though the main focus will be on the nature of comedy and comic effects and on the specific workings of plays read in class together.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 020. Plato and His Modern Readers

(Cross-listed as PHIL 020)

Modern thinkers have ascribed to Plato some of the fundamental good and ills of modern thought. It has been claimed, for example, that Socrates and Plato distorted the entire course of Western philosophy, that Plato was the greatest political idealist, that Plato was the first totalitarian, that Plato was a feminist, and that Plato betrayed his teacher, Socrates. In this course, we will view Plato through the lens of various modern and postmodern interpretations (e.g., Nietzsche, Heidegger, Foucault, Irigaray, Rorty, Murdoch, Nussbaum, Vlastos) alongside a close analysis of ethical, metaphysical, and epistemological issues as they arise in the dialogues themselves.

Writing course.

Humanities. 1 credit.

Spring 2013. Ledbetter.

CLAS 025. Greek Myth and Opera

Greek myths have provided the subject matter for some of the most important and pivotal works in the history of opera and ballet. Just as Greek myth informs these arts, so too, opera and ballet transform these myths and the way they are viewed by modern audiences. New and daring productions of classical operas continue to transform both Greek mythology and its operatic incarnations. George Balanchine's Neoclassicism modernized ballet radically in the 20th century by drawing largely on Greek myth and classical aesthetic structures. In this course, we will study the relevant primary classical sources for operas and ballets such as Handel's *Xerxes*, Gluck's *Orfeo ed Euridice*, Berlioz's *Les Troyens*, Strauss's *Electra*, Stravinsky's *Oedipus Rex*, Balanchine's *Apollo*, *Agon*, and *Orpheus*. At the same time, we will study the operas and ballets themselves in their cultural context, and in the course of their performance history, paying special attention to recent productions.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 036. Classical Mythology

Greek myths are central to the study of the ancient world and have had an enormous influence on subsequent literature and other arts. This course examines selected myths in the works of major authors of Greek literature, including Homer, Aeschylus, Sophocles, and Euripides. The course will also cover several modern theoretical approaches to the study of myth.

Writing course.

Humanities. 1 credit.

Fall 2012. Munson.

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CLAS 040. Visions of Rome

This course provides an overview of cinematic responses to the idea of Rome, ancient and modern, city and empire, place and idea, from the silent era to the present day. We will spend some time comparing films set in Rome to ancient and modern representations of the eternal city in literary and other visual media. But our primary focus will be on the ways in which cinematic visions of Rome reflect evolving cultural, political, and social conditions on both sides of the Atlantic. Specific topics to be explored include the popularity of classical themes in early silent films; Rome on screen during the rise and fall of fascism; neorealism and the shifting landscape of the city; the politics of Hollywood epics; and the dialectic between conceptions of antiquity and modernity as reflected in cinema. Screenings of films by major Italian and Anglophone filmmakers, including Pastrone, DeMille, Rossellini, Visconti, Wyler, Pasolini, Fellini, Virzi, and other major directors. Readings of texts by Petronius, Juvenal, Byron, Hawthorne, Dickens, Freud, Yourcenar, Rohmer, Calvino, and Barthes.

Writing course.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 060. Dante's Divine Comedy

We shall study the entire work and journey with the Pilgrim through the three realms of the world beyond. Special attention will be devoted to Dante's re-reading of previous texts, from the Latin classics to the burgeoning vernacular literatures of his own time. We shall also attempt to reconstruct Dante's world view in the context of Medieval culture: his thoughts on life, death, love, art, politics, history, his personal story, and God.

Humanities. 1 credit.

Not offered 2012–2013.

CLAS 091. Capstone Seminar: Hero Time Travel

(Cross-listed LING 091/INTP 091)

Virgil's *AENEID*, Dante's *DIVINA COMMEDIA*, and several of Eugenio Montale's poems deal with a hero's journey. We examine how the journey varies in these poems as each author looks back on the earlier one, reinterpreting and creating anew. We have three foci: Narratology, semiotics, and reception theory. Matters of esthetics, linguistics, and politics of the time and place will come up repeatedly. All poetry will be in the original (Latin, Old Italian, and Italian) with English translations, so there are no language prerequisites. There will be theory readings as well as poetry each week.

Humanities. 1 credit.

Spring 2013. Munson, Napoli.

CLAS 093. Directed Reading

Independent work for advanced students under the supervision of an instructor.

Humanities. 1 credit.

Seminars

LATN 102. The Roman Emperors

This seminar explores Latin authors of the first and second centuries, with particular attention to their responses to the social and political structures of the period. Expressed attitudes toward the emperors range from adulation to spite, but the seminar concentrates on authors who fall somewhere in between, writing skeptically or subversively. Both prose writers (e.g., Tacitus, Suetonius, and Pliny) and poets (e.g., Lucan, Seneca, and Juvenal) may be included.

Humanities. 2 credits.

Not offered 2012–2013.

LATN 103. Latin Epic

This seminar usually focuses on Vergil's *Aeneid*, although it may include other major Latin epics.

Humanities. 2 credits.

Fall 2012. Munson.

LATN 104. Ovid's Metamorphoses

This seminar is devoted to the *Metamorphoses*, which is read against the background of Ovid's Roman and Greek literary predecessors.

Writing course.

Humanities. 2 credits.

Not offered 2012–2013.

LATN 105. The Fall of the Roman Republic

This seminar examines Latin texts from the traumatic period of the Late Republic (70–40 B.C.E.). It focuses on the social and political crisis of the period as well as its connections with the artistic and philosophical achievements of the first great period of Latin literature. Authors may include Lucretius, Catullus, Caesar, Cicero, and Sallust.

Humanities. 2 credits.

Not offered 2012–2013.

LATN 106. Tacitus

The seminar will read extensive excerpts from the *Annals* of Tacitus, usually including at least one complete book. Additional readings from the *Histories* and the *Agricola* may also be included. The principal questions addressed will include: Tacitus' accuracy and objectivity as a historian, the importance of rhetorical

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techniques on Tacitus' language and narrative, and the question of his attitude to particular emperors (Augustus, Tiberius, Claudius, Nero, Vespasian, and Domitian). Above all we will consider the question of Tacitus' ideas about the imperial system of government: to what extent did he think Romans should resist monarchy or tyranny, and to what extent should they adjust their morality to accommodate it?

Humanities. 2 credits.

Not offered 2012–2013.

LATN 107. Horace

The seminar emphasizes the *Odes* and *Epodes* and their place in the tradition of Greek and Roman lyric poetry. Attention is also given to the *Satires* and *Epistles*, including the *Ars Poetica*, and to their importance for the history of satire and literary criticism. An effort is made to grasp the totality of Horace's achievement in the context of the Augustan Age.

Writing course.

Humanities. 2 credits.

Spring 2013. Turpin.

LATN 108. Roman Comedy

This seminar is devoted to Plautus and Terence, whose adaptations of Greek plays are among the oldest surviving works of Latin literature. The primary focus will be on close study of the language and structure of the plays, but students will also become familiar with a range of critical and theoretical approaches to comedy. Specific topics to be explored include the production and performance of ancient drama; the Roman appropriation of Greek literary genres; representations of slaves, prostitutes, and other marginal figures on the comic stage; and the influence of Roman Comedy on post-classical European drama.

Humanities. 2 credits.

Not offered 2012–2013.

GREK 111. Greek Philosophy and Religion

It has been said that, with the rise of Greek philosophy, change and revolution were finally seen to irrupt into the static structures of Greek religion. What exactly is the relationship between Greek philosophy and religion? Do the philosophers attempt to destroy traditional religion, or should we view them instead as transforming it? This seminar will study how thought about the divine develops in the Presocratics, Socrates, Plato, and Aristotle and how the philosophers' views more generally might be considered "religious." Topics will include theology, cosmology, eschatology, morality, and the good life; the tradition of the holy man; and philosophical schools as religious communities.

Humanities. 2 credits.

Fall 2012. Ledbetter.

GREK 112. Greek Epic

This seminar studies either the entirety of Homer's *Odyssey* in Greek or most of the *Iliad*.

Humanities. 2 credits.

Spring 2013. Munson.

GREK 113. Greek Historians

This seminar is devoted to a study of Herodotus and Thucydides, both as examples of Greek historiography and as sources for Greek history.

Writing course.

Humanities. 2 credits.

Not offered 2012–2013.

GREK 114. Greek Drama

This seminar usually focuses on one play by each of the major tragedians—Aeschylus, Sophocles, and Euripides. Other plays are read in translation. The works are placed in their cultural setting and are discussed as both drama and poetry.

Humanities. 2 credits.

Not offered 2012–2013.

GREK 115. Greek Lyric Poetry

This seminar will focus on the development of archaic Greek elegy (Archilochus, Tyrtaeus, Solon, Xenophanes, Semonides, Theognis) monodic lyric (Sappho, Alcaeus, Anacreon, and Simonides) and choral lyric (Pindar and Bacchylides), paying particular attention to lyric's dialogue with the epic tradition, the so-called rise of the individual, political and performative contexts, and modern interpretive approaches.

Humanities. 2 credits.

Not offered 2012–2013.

Cognitive Science

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Coordinator: ALAN BAKER (Philosophy)

Committee: Frank Durgin (Psychology)
Daniel Grodner (Psychology)
K. David Harrison (Linguistics)
Lisa Meeden (Computer Science)

The minor in cognitive science has been developed to guide the programs of those who are interested in the interdisciplinary study of the mind, brain, and language, with emphases on formal structure, biological information processing, and computation. The Cognitive Science Program is designed to emphasize guided breadth across various disciplines that contribute to cognitive science as well as depth within a chosen discipline.

A student may have many reasons for deciding to minor in cognitive science. Perhaps the simplest is to indicate and explore a particular interest in cognitive science. Whatever your major, a minor in cognitive science indicates a kind of specialized interest and developing expertise. It is our hope that this interest will be integrated with your major area of study, and we hope to help you formulate a plan of studies that sensibly achieves the requirements of the minor.

The Academic Program

We conceive of cognitive science as a loose federation of six specific disciplines. The disciplines included are neuroscience, computer science (including computer engineering), linguistics, mathematics and statistics, philosophy, and cognitive psychology. To demonstrate breadth, students minoring in cognitive science are required to complete at least 5 credits across three of these six disciplines (see details and the list of courses). Students who wish to use 2 credits in mathematics and statistics as one of their disciplines for a cognitive science minor must choose 2 credits from a single sub-area of mathematics and indicate its relevance to at least one of the two other disciplines chosen for the minor. Minors must also show a particular strength or depth in one of the six disciplines.

Course Minor

Six or 7 credits are required for the minor. One of these is a required introductory course, and the remaining 5 or 6 are to be distributed across three different disciplines as described subsequently.

In addition to fulfilling these breadth requirements, students must indicate one cognitive science field in which they have substantial depth of preparation. Such depth can be documented by completion of at least four

courses from within a cognitive science discipline (even if some of those courses are not directly related to cognitive science). Alternative curricular and extracurricular ways of fulfilling the depth requirement may be discussed with the coordinator.

Honors Minor

To complete an honors minor in cognitive science, students must complete all requirements listed above. The honors preparation for the minor will normally be a 2-credit unit approved by the relevant department from courses listed for the minor. The minor preparation must be within a discipline that is not the student's honors major. Students are encouraged to develop an appropriate preparation in consultation with the coordinator.

Special Major

A special major is possible. Please consult with the program coordinator to develop a special major plan. All minors and special majors must normally take COGS 001: Introduction to Cognitive Science.

Thesis / Culminating Exercise

Minors who wish to get formal research experience may choose to complete a 1-credit thesis in cognitive science during their senior year. Non-honors theses in cognitive science will normally be examined by Cognitive Science Committee members from within at least two different departments.

Courses

COGS 001. Introduction to Cognitive Science

An introduction to the science of the mind from the perspective of cognitive psychology, linguistics, neuroscience, philosophy, and artificial intelligence. The course introduces students to the scientific investigation of such questions as the following: What does it mean to think or to have consciousness? Can a computer have a mind? What does it mean to have a concept? What is language? What kinds of explanations are necessary to explain cognition?

1 credit.

Spring 2013. Grodner.

Cognitive Science

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COGS 090. Senior Thesis

The one-credit thesis project can be supervised by any of a number of faculty members associated with the departments in the program but should be approved in advance by the program coordinator. A thesis may be used to establish depth in an area and is normally a required component of a special major in cognitive science.

1 credit.

Each semester. Staff.

The remaining 5 required credits are to be distributed evenly among three different disciplines of cognitive science. That is, 2 credits of listed courses from each of three of the six disciplines must be completed, with the exception that in one—and only one—of the three disciplines, a single “focus” course* may be used to meet the breadth requirement. The list of courses currently approved as cognitive science courses is rather selective because it is intended to focus students on the most essential cores of cognitive science within each discipline. For disciplines where there are courses designated as focus courses, at least one focus course must be taken to include that discipline in the minor. Many more courses, taught on campus, are closely relevant to cognitive science; this list is subject to periodic re-evaluation.

Computer Science/Computer Engineering

CPSC 063. Artificial Intelligence (*focus course*)

CPSC 065. Natural Language Processing

CPSC 081. Adaptive Robotics (*focus course*)

ENGR 028. Mobile Robotics

Linguistics

LING 040/108. Semantics (*focus course*)

LING 043/106. Morphology and the Lexicon

LING 045/105. Phonology (*focus course*)

LING 050/109. Syntax (*focus course*)

LING 06X. Structure of a non-Indo-European Language

Mathematics and Statistics

The sub-areas of mathematics and their eligible seminars and courses are the following:

Algebra: MATH 057/077, 058, 067, and 102.

Analysis: MATH 034, 044, 053/073, 054, 063, 101, and 103.

Discrete Mathematics: MATH 029, 046, 059/079, and 069.

Geometry: MATH 055/75 and 106.

Statistics: STAT 011, 031, and 061; MATH 105 and STAT 111.

Topology: MATH 104.

Neuroscience

BIOL 022. Neurobiology (*focus course*)

BIOL 123. Learning and Memory

PSYC 030. Physiological Psychology

PSYC 031. Cognitive Neuroscience (*focus course*)

PSYC 091. Advanced Topics in Behavioral Neuroscience

PSYC 130. Physiological Seminar

Philosophy

PHIL 012/031. Logic/Advanced Logic (*focus course*)

PHIL 024/113. Theory of Knowledge

PHIL 026/116. Language and Meaning

PHIL 086/118. Philosophy of Mind (*focus course*)

Psychology

PSYC 032. Perception (*focus course*)

PSYC 033. Cognitive Psychology (*focus course*)

PSYC 034/134. Psychology of Language/Psycholinguistics (*focus course*)

PSYC 039. Developmental Psychology

PSYC 042. Human Intelligence

PSYC 133. Perception, Cognition, and the Embodied Mind

THEA 105. Theater Seminar: The Act of Spectatorship

* *Focus courses are concerned with issues most central to cognitive science and are normally taught with this objective in mind.*

Comparative Literature

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Coordinator: Alexandra Gueydan (Modern Languages and Literatures, French)

Committee: Alan Berkowitz (Modern Languages and Literatures, Chinese)¹
 Jean-Vincent Blanchard (Modern Languages and Literatures, French)²
 Elizabeth Bolton (English Literature)
 Rachel Buurma (English Literature)
 Sibelan Forrester (Modern Languages and Literatures, Russian)
 William O. Gardner (Modern Languages and Literatures, Japanese)
 Maria Luisa Guardiola (Modern Languages and Literatures, Spanish)
 Haili Kong (Modern Languages and Literatures, Chinese)
 Allen Kuharski (Theater)³
 Rosaria V. Munson (Classics)
 Philip M. Weinstein (English Literature)⁶
 Hansjakob Werlen (Modern Languages and Literatures, German)

¹ Absent on leave, fall 2012.

² Absent on leave, spring 2013.

³ Absent on leave, 2012–2013.

⁶ Spring 2013.

The Comparative Literature Committee, made up of the coordinator and faculty representing the departments of classics, English literature, modern languages and literatures, and theater, administers the comparative literature major. The basic requirement for the major is work in two literatures in the original language.

The major in comparative literature is designed for those students who have a love for literature and a strong desire to write and are interested in literary critical research. This major assumes a fair degree of discipline, independence, and self-motivation on the part of the student, especially in the development and writing of the thesis.

The Academic Program

In planning a comparative literature major, students should look at course listings in the classics, English literature, and modern languages and literatures departments. In the classics and modern languages and literatures, only courses in the original language numbered 011 or above are counted as constituents of the comparative literature major. Of English courses numbered ENGL 008A-Z and 009A-Z, only one may be counted toward the major.

Course Major

Ten credits in two or more literatures in the original languages, including a substantial concentration of work—normally four or five courses—in each of the literatures. The thesis (described later) does not count toward these 10 credits.

Students working entirely in languages other than English may propose one course in translation as a part of their program, as long as it is deeply relevant to their plan of study. Students working in English and any language

other than Arabic, Chinese, and Japanese must do all of their work in the original languages. Because of the special demands of Arabic, Chinese, and Japanese language and literature, students working in any of those three languages may propose a program based on attachments (in Arabic, Chinese, and Japanese) to literature courses taught in translation.

A 1- or 2-credit thesis of 35 to 40 pages for one credit, 50–60 pages for two credits, covering work in at least two languages, planned in the spring of the junior year and submitted in the spring of the senior year, no later than April 30.

Before the end of the junior year, the student will submit to the committee an outline for the thesis and propose faculty advisers from appropriate departments. In some cases, the committee may ask that the thesis be written in whole or in part in the language of a literature studied other than English.

An oral comprehensive examination, 1 to 1.5 hours in length, at the end of the senior year, based on the thesis and courses and seminars that the major comprises.

Honors Major

Four 2-credit preparations in at least two literatures in the original language, one of which is a thesis. One of the preparations may be used as an independent minor (in Russian or German studies, for instance) if the minor's departmental requirements have been met. Minors requiring unrelated preparations such as biology or psychology are not allowed. All four honors preparations are necessary components of the comparative literature honors major.

For each preparation, a 3-hour written examination prepared by the external examiner and a 30-minute oral based on the contents of the written examination.

Comparative Literature

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Successful completion of an advanced course in literature in each of the literatures of the student's program of study is a prerequisite for admission into the Honors Program. A minimum grade of a B is required.

Honors Minor

A 2-credit thesis of 50 to 60 pages, integrating preparations that have been done in two literatures in the original language.

Thesis / Culminating Exercise

All majors will meet with members of the Comparative Literature Committee before the end of the junior year to review and assess the student's program. At this time, both course and honors majors will submit thesis proposals and propose faculty advisers.

The courses and seminars that compose the comparative literature major's formal field of study will naturally differ with each major. To give some sense of the range of possibilities available, a series of sample programs is offered.

Application Process Notes for the Major or the Minor

Students applying for the major will submit to the comparative literature coordinator a proposal of integrated study that sets forth the courses and/or seminars to be taken and the principle of coherence on which the program of study is based. The student will also submit a 6- to 10-page writing sample from a previously completed course. The committee will review the proposal and the essay and advise the student.

Note: In lieu of a traditional course, the Comparative Literature Committee will consider proposals for one or more research papers written as course attachments as well as proposals to substitute an extended research paper for course credit.

Sample: Comparative Literature Course Major

Focus: The Black Atlantic Courses

ENGL 009S. First-Year Seminar: Black Liberty, Black Literature

ENGL 054. Core Course: Faulkner, Morrison, and the Representation of Race

ENGL 061. Core Course: Fictions of Black America

ENGL 062. Black Autobiography

FREN 012. Introduction aux études littéraires et culturelles françaises et francophones

FREN 045. Le monde francophone

FREN 057. Prose Francophone: Littérature et société

FREN 071. French Cultural and Critical Theory

FREN 110. Histoires d'îles

2-credit thesis.

Sample: Comparative Literature Honors Major

Focus: Modernism Courses

ENGL 045. Core Course: Modern British Poetry

ENGL 053. Core Course: Modern American Poetry

GMST 020. Introduction to German Studies: Topics in German Literature and Culture

GMST 091. Special Topics in German Studies

Seminars

ENGL 115. Modern Comparative Literature

ENGL 116. American Literature

GMST 109. Rise of the Modern German Novel

2-credit thesis.

Sample: Comparative Literature Honors Minor

Background Courses

GMST 020. Introduction to German Studies: Topics in German Literature and Culture

GMST 091. Special Topics in German Studies (plus attachment in German)

SPAN 022. Introducción a la literatura española

SPAN 108. Jorge Louis Borges

2-credit thesis: Kant's influence on Hölderlin and Borges

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LISA MEEDEN, Professor³
 TIA NEWHALL, Associate Professor
 RICHARD WICENTOWSKI, Associate Professor and Chair
 ANDREW DANNER, Assistant Professor
 AMEET SONI, Assistant Professor
 JASON WATERMAN, Visiting Assistant Professor
 ADAM AVIV, Visiting Assistant Professor
 FRANCES RUIZ, Academic Support Coordinator
 JEFFREY KNERR, System Administrator
 BRIDGET M. ROTHERA, Administrative Assistant

³ Absent on leave, 2012–2013.

Computer science is the study of algorithms and their implementation. This includes the study of computer systems; methods to specify algorithms (for people and computer systems); and the formulation of theories and models to aid in the understanding and analysis of the properties of algorithms, computing systems, and their interrelationship.

The computer science curriculum is designed to provide students with a flexible set of computing choices that can be tailored to satisfy various interests and depths of study. All courses emphasize the fundamental concepts of computer science, treating today's languages and systems as current examples of the underlying concepts. The computer science laboratory provides up-to-date software and hardware facilities.

The Academic Program

The Computer Science Department offers course majors and minors and honors majors and minors. Students interested in any of these options are encouraged to meet with the chair of the Computer Science Department as early as possible in their college career. Students who are interested in a computer science major or minor are encouraged to take CPSC 021, CPSC 033 and CPSC 035 sometime in their first four semesters at Swarthmore. The minor in computer science is designed for students who desire a coherent introduction to the core topics in the field. Students completing the minor will possess intellectual skills that are useful in many disciplines.

First course recommendations

CPSC 021: Introduction to Computer Science presents fundamental ideas in computer science while building skill in software development. No previous experience with computers is necessary. This course is appropriate for all students who want to write programs. It is the usual first course for computer science majors and minors. Students with Advanced Placement credit or extensive programming experience may be able to place out of this course.

CPSC 033: Computer Organization assumes that the student has completed CPSC 021 or its equivalent. It is the best entry point for students intending to be Computer Science majors or minors who already have extensive computing experience.

CPSC 035: Data Structures and Algorithms assumes that the student has completed CPSC 021 or its equivalent. It is an appropriate entry point for students with extensive computing experience.

Students who think they may qualify for CPSC 033 or CPSC 035 and have not taken CPSC 021 should see the instructor or department chair. Students or advisers who want more advice on placement in computer science courses should feel free to contact any computer science faculty member by phone or in person.

Interdisciplinary recommendations

The department recommends that students with an interest in computer science should consider using MATH 027 (Linear Algebra) and/or MATH 029 (Discrete Math) to satisfy the math requirement for the major and minor. Statistics courses at the level of STAT 031 (Data Analysis and Visualization) or above can also be used to satisfy the math requirement.

The Computer Science department offers three courses approved as cognitive science courses: CPSC 063 (Artificial Intelligence), CPSC 065 (Natural Language Processing) and CPSC 081 (Adaptive Robotics). Students with an interest in Cognitive Science are encouraged to consider COGS 001 (Introduction to Cognitive Science).

In addition to courses offered by computer science faculty, the department recommends that students with an interest in computer engineering consider courses offered by the Engineering department, including three courses that are cross-listed by the Computer Science department: CPSC 052 (Computer Architecture), CPSC 072 (Computer Vision) and CPSC 082 (Mobile Robotics).

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Course Major

The following are the requirements for a major in computer science:

1. Nine courses in computer science:
 - a. CPSC 021. (If exempted from CPSC 021 without AP credit, substitute one of CPSC 041, CPSC 045, or CPSC 075 in its place.)
 - b. CPSC 035 and CPSC 097.
 - c. One of CPSC 033 or CPSC 052.
 - d. One of CPSC 037 or CPSC 075.
 - e. One of CPSC 041 or CPSC 046
 - f. Three of the following (must be different than the choices in parts, c, d and e): CPSC 040, CPSC 041, CPSC 043, CPSC 044, CPSC 045, CPSC 046, CPSC 052, CPSC 063, CPSC 065, CPSC 067, CPSC 068, CPSC 072, CPSC 075, CPSC 081, CPSC 082, CPSC 087, CPSC 091, CPSC 093.
2. Two mathematics courses at the level of Linear Algebra or above (Discrete Math and Linear Algebra are recommended).

Course Minor

The minor in computer science provides students with a well-rounded background in computer science sufficient to develop significant, creative applications and to keep up with the rapid changes in the field.

The following are the requirements for a minor in computer science:

1. Six courses in computer science.
 - a. CPSC 021. (If exempted from CPSC 021 without AP credit, substitute one of CPSC 041, CPSC 045, or CPSC 075 in its place.)
 - b. CPSC 035.
 - c. One of CPSC 033 or CPSC 052.
 - d. One of CPSC 037 or CPSC 075.
 - e. One of CPSC 041 or CPSC 046.
 - f. One of the following (must be different than the choices in part c, d, and e): CPSC 040, CPSC 041, CPSC 043, CPSC 044, CPSC 045, CPSC 046, CPSC 052, CPSC 063, CPSC 065, CPSC 067, CPSC 068, CPSC 072, CPSC 075, CPSC 081, CPSC 082, CPSC 087, CPSC 091, CPSC 093.
2. One mathematics course at the level of Linear Algebra or above (Discrete Math recommended).

Honors Major

An honors major in computer science will consist of completion of the course major, two 2-credit preparations, one 2-credit research report or thesis.

The following will be submitted to external examiners for evaluation:

Two 2-credit preparations to be selected from the combinations of courses listed under Approved Preparations. Each of these 2-credit preparations will be examined by a 3-hour written examination and an oral examination.

The two 2-credit preparations must include four distinct courses. In certain circumstances, the Computer Science Department may be willing to consider other groupings of courses, seminars, or courses with attachments. If the required courses and preparations would not satisfy a course major, additional computer science courses must be taken to meet course major requirements. In all cases, the Computer Science Department must approve the student's plan of study.

One research report or thesis to be read by an external examiner and examined in an oral examination.

At a minimum, this will involve a review of scholarly papers from the primary literature of computer science and the writing of a scholarly, scientific paper. The paper will report on a research experience involving the student and faculty (here or elsewhere). It is expected that most of the research or scholarly groundwork will be completed before the fall semester of the senior year, either by 1 credit of work in the spring semester of the junior year or full-time summer work. Students will register for at least 1 credit of thesis work to complete the work and write the paper in the fall of the senior year. It is recommended that the paper be completed by the end of the fall semester.

Acceptance Criteria

To be eligible for an honors major in computer science, students must complete the following:

1. Have a B+ average in all computer science courses completed by the end of junior year. These must include CPSC 021 and CPSC 035, and at least two of CPSC 033, CPSC 037, CPSC 041, CPSC 046 or CPSC 075.
2. Have demonstrated proficiency in mathematical argument and reasoning by the end of the junior year. Ordinarily, this proficiency will be assumed if the student has done one of the following:

- a. Completed Discrete Mathematics and Linear Algebra with a grade of B+ or better
 - b. Completed Linear Algebra Honors with a grade of B or better
 - c. Completed Introduction to Real Analysis or Introduction to Modern Algebra with a grade of B- or better
3. Completed by the end of the senior year a set of courses that would qualify for an ordinary computer science major as well as CPSC 180 (Thesis).

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Honors Minor

An honors minor in computer science will consist of completion of the course minor and one 2-credit preparation.

The following will be submitted to external examiners for evaluation:

One 2-credit preparation to be selected from the combinations of courses listed under Approved Preparations. This 2-credit preparation will be examined by a 3-hour written examination and an oral examination.

The 2-credit preparation must include two distinct courses. In certain circumstances, the Computer Science Department may be willing to consider other groupings of courses, seminars, or courses with attachments. If the required courses and preparations would not

satisfy a course minor, additional computer science courses must be taken to meet course minor requirements. In all cases, the Computer Science Department must approve the student's plan of study.

Acceptance Criteria

To be eligible for an honors minor in computer science, a student must satisfy course requirements for a regular minor in computer science and in addition:

1. Have a B+ average in all computer science courses completed by the end of the junior year.
2. Take one 2-credit preparation to be selected from the combinations of courses listed under Approved Preparations. An examiner will set both a 3-hour written examination and an oral examination for the preparation.

Approved Preparations for the Honors Major and Minor

The following are the approved preparations. These may not all be available to all students because of the faculty's schedules.

Preparation	Course Combinations
Algorithms and Theory	CPSC 041. Algorithms CPSC 046. Theory of Computation
Intelligent Systems	CPSC 063. Artificial Intelligence CPSC 081. Adaptive Robotics
Parallel and Distributed Systems	CPSC 045. Operating Systems CPSC 087. Parallel and Distributed Computing
Natural Language Models	CPSC 063. Artificial Intelligence CPSC 065. Natural Language Processing
Robotics	CPSC 081. Adaptive Robotics CPSC 082. Mobile Robotics
Language Processing	CPSC 065. Natural Language Processing CPSC 067. Information Retrieval
Programming Languages and Compilers	CPSC 037. Structure and Interpretation of Computer Programs CPSC 075. Compiler Design and Construction
Parallel Systems and Algorithms	CPSC 041. Algorithms CPSC 087. Parallel and Distributed Computing

Thesis / Culminating Exercise

Senior Conference is the comprehensive requirement for computer science course and honors majors. It provides an opportunity to delve more deeply into a particular topic in computer science, synthesizing material from previous courses.

Application Process and Acceptance Criteria for Majors/Minors

In addition to the process described by the Dean's Office and the Registrar's Office for how to apply for a major, we also ask that students complete a departmental form

outlining how they intend to fulfill the requirements for their intended major, minor, honors major or honors minor. Successful completion of at least two computer science courses including CPSC 035 is ordinarily required to be admitted as a computer science major or minor. If after applying a student is deferred, he or she will be re-evaluated upon completion of additional computer science courses.

Advanced Placement

Students who receive a 4 or 5 on the computer science Advanced Placement exam will be awarded one credit upon successful completion of one computer science course taken at

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Swarthmore. Students should consult with any computer science faculty member about placement. Students who are placed out of CPSC 021 with AP credit need to take only 8 additional courses in computer science to complete the major, and 5 additional courses in computer science to complete the minor.

Off-Campus Study

Students planning to major or minor in computer science may opt to study abroad for one semester or a whole year. Because some advanced courses in computer science are offered in only alternate years, some selections will be unavailable to some students. The chair of the Computer Science Department should preapprove all courses of study abroad in advance of the student's departure. The department will credit appropriate courses based on sufficient evidence of work completed presented by the student upon returning to Swarthmore.

Life After Swarthmore

Graduate School

Students interested in graduate study in computer science will be well prepared with a computer science major. Some graduate programs will also accept students who have majored in mathematics or engineering and completed a sufficient number and selection of computer science courses. The choice of the appropriate major and computing courses will depend on the student's interests and should be made in consultation with the chair of the Computer Science Department. Other majors are also reasonable for students with special interests. For example, a major in linguistics or psychology might be appropriate for a student interested in artificial intelligence or cognitive science. In such cases, students should consult with the chair of the department as early as possible to ensure that they take the necessary mathematics and computing courses for graduate work in computer science.

Courses

CPSC 021. Introduction to Computer Science

This course presents fundamental ideas in computer science while building skills in software development. Students implement algorithms as programs in a high-level programming language. Introducing object-oriented programming and data structures allows students to construct correct, understandable, and efficient algorithms. CPSC 033 and CPSC 035 present a deeper coverage of these topics. CPSC 021 is appropriate for all students who want to be able to write programs.

It is the usual first course for computer science majors and minors. Students with Advanced Placement credit or extensive programming experience may be able to place out of this course. Students who think that they may fall into this latter category should consult with any computer science faculty member.

Lab work required, programming intensive. No prerequisites.

Natural sciences and engineering practicum.

1 credit.

Each semester. Staff.

CPSC 033. Computer Organization

This course takes a bottom-up approach to answering the question of how a computer works. Topics include theoretical models of computation, bits, bytes and data representations, operations on data, digital logic structures, computer memory, assembly and machine code, hardware components, the stack, the operating system, compilers, and the C programming language. We examine the hardware and software components required to go from a program expressed in a high-level programming language to the computer actually running the program.

Prerequisites: CPSC 021 or equivalent.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Newhall.

CPSC 035. Data Structures and Algorithms

This course completes the broad introduction to computer science begun in CPSC 021. It provides a general background for further study in the field. Topics to be covered include object-oriented programming in C++, advanced data structures (trees, priority queues, hash tables, graphs, etc.) and algorithms, and software design and verification. Students will be expected to complete several programming projects illustrating the concepts presented.

Prerequisite: CPSC 021 or equivalent. Discrete Mathematics is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Each semester. Staff.

CPSC 037. Structure and Interpretation of Computer Programs

This course is a serious introduction to the study of computer programs and, through programs, some central ideas in computer science. By studying programs that make repeated and deep use of abstraction, students will learn how to generate precise specifications

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from vaguely formulated and perhaps partially understood descriptions. Topics to be covered include programming idioms and paradigms, recursion, information retrieval, binding and scope, interpreters, and compilers.

Prerequisite: CPSC 035.

Lab work required.

1 credit.

Fall 2013.

CPSC 040. Computer Graphics

(Cross-listed as ENGR 026)

Computer graphics focuses on the creation and manipulation of digital imagery. We cover the modeling, rendering, and animating of geometric object in two (2D) and three (3D) dimensions. Topics include drawing algorithms for 2D geometric primitives (points, lines, polygons), geometric matrix transformations, projective geometry, geometric object representations, hidden surface removal, hierarchical modeling, shading, lighting, shadows, ray-tracing, procedural (non-geometric) modeling, texture mapping, and animation. Labs will explore various tools for rendering graphics, including pixel buffers, OpenGL, shading languages, and general purpose GPU computing.

Prerequisites: CPSC 035 and Linear Algebra required or permission of the instructor. (Linear Algebra may be taken concurrently.)

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Danner.

CPSC 041. Algorithms

The study of algorithms is useful in many diverse areas. As algorithms are studied, considerable attention is devoted to analyzing formally their time and space requirements and proving their correctness. Topics covered include abstract data types, trees (including balanced trees), graphs, searching, sorting, NP complete optimization problems, and the impact of several models of parallel computation on the design of algorithms and data structures.

Prerequisites: CPSC 035 required. Mathematics background at the level of Linear Algebra or higher is required (may be taken concurrently).

Lab work required.

1 credit.

Fall 2012. Danner.

CPSC 043. Computer Networks

This course covers the design, implementation and applications of computer networks, primarily focused on the protocols that enable the Internet and network applications. Additionally, this course will cover network

security, such as viruses, worms, and botnets.

Topics will include: data communication theory; packet-switched routing; the Internet and its protocols; socket and network application programming; overlays and P2P networks; and network security.

Prerequisite: CPSC 035 required. One of CPSC 033 or CPSC 052 is recommended.

Lab work required.

1 credit.

Fall 2012. Aviv.

CPSC 044. Database Systems

This course provides an introduction to relational database management systems. Topics covered include data models (ER and relational model); data storage and access methods (files, indices); query languages (SQL, relational algebra, relational calculus, QBE); query evaluation; query optimization; transaction management; concurrency control; crash recovery; and some advanced topics (distributed databases, object-relational databases). A project that involves implementing and testing components of a relational database management system is a large component of the course.

Prerequisite: CPSC 035 required. One of CPSC 033 or CPSC 052 is recommended.

Lab work required.

1 credit.

Next offered 2013–2014.

CPSC 045. Operating Systems

(Cross-listed as ENGR 022)

This course is an introduction to the theory, design, and implementation of operating systems. An operating system is the software layer between user programs and the computer hardware. It provides abstractions of the underlying hardware that are easier to program, and it manages the machine's resources. The following topics will be covered: processes (including synchronization, communication, and scheduling); memory (main memory allocation strategies, virtual memory, and page replacement policies); file systems (including naming and implementation issues); I/O (including devices, drivers, disks, and disk scheduling); and security.

Prerequisite: CPSC 035 required. One of CPSC 033 or CPSC 052 is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Fall 2013. Newhall.

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CPSC 046. Theory of Computation

(Cross-listed as MATH 046)

This study of various models of computation leads to a characterization of the kinds of problems that can and cannot be solved by a computer. Solvable problems will be classified with respect to their degree of difficulty. Topics to be covered include formal languages and finite state devices; Turing machines; and other models of computation, computability, and complexity.

Prerequisite: CPSC 035 required. Mathematics background at the level of Linear Algebra or higher is required (may be taken concurrently).

Lab work required.

1 credit.

Not offered 2012–2013.

CPSC 052. Principles of Computer Architecture

(See ENGR 025)

Prerequisites: One of ENGR 015, CPSC 033, or CPSC 035.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Moreshet.

CPSC 063. Artificial Intelligence

Artificial intelligence (AI) can be defined as the branch of computer science that is concerned with the automation of intelligent behavior. Intelligent behavior encompasses a wide range of abilities; as a result, AI has become a very broad field that includes game playing, automated reasoning, expert systems, natural language processing, modeling human performance (cognitive science), planning, and robotics. This course will focus on a subset of these topics and specifically on machine learning, which is concerned with the problem of how to create programs that automatically improve with experience. Machine learning approaches studied will include neural networks, decision trees, genetic algorithms, and reinforcement techniques.

Prerequisites: CPSC 035 required.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Fall 2013.

CPSC 065. Natural Language Processing

(Cross-listed as LING 020)

This course is an introduction to the fundamental concepts in natural language processing, the study of human language from a computational perspective. The focus will be on creating statistical algorithms used in the analysis and production of language. Topics to

be covered include parsing, morphological analysis, text classification, speech recognition, and machine translation. No prior linguistics experience is necessary.

Prerequisite: CPSC 035 required.

Lab work required.

1 credit.

Fall 2012. Wicentowski.

CPSC 067. Information Retrieval

This course will explore methods for searching and retrieving information from digital text sources. We will design and evaluate algorithms for automating document retrieval, document clustering, mail filtering, relevance feedback, data mining on the Web, Web robots, search engines, information extraction, question answering, and document summarization.

Prerequisite: CPSC 035 required.

Lab work required.

1 credit.

Next offered when staffing permits.

CPSC 068. Bioinformatics

This course is an introduction to the fields of bioinformatics and computational biology, with a central focus on algorithms and their application to a diverse set of computational problems in molecular biology. Computational themes will include dynamic programming, greedy algorithms, supervised learning and classification, data clustering, trees, graphical models, data management, and structured data representation. Applications will include genetic sequence analysis, pairwise-sequence alignment, phylogenetic trees, motif finding, gene-expression analysis, and protein-structure prediction. No prior biology experience is necessary.

Prerequisite: CPSC 035 required.

Lab work required.

1 credit.

Spring 2013. Soni.

CPSC 071. Software Engineering: iOS Development

This course is an introduction to software engineering, with a focus on iOS development. iOS is the name of the operating system that runs on many of Apple's products including the iPhone, iPod Touch, and iPad. In this course, students will learn how to write iOS apps in Objective C using Apple's Xcode IDE (integrated development environment). Topics will also include readings on user interface design, project implementation and unit testing. Students do not need to own an iOS device to take the course.

Prerequisite: CPSC 035 required.

Lab work required.

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1 credit.

Spring 2013. Wicentowski.

CPSC 072. Computer Vision

(See ENGR 027)

Prerequisites: ENGR 015 or CPSC 035 required. Linear Algebra is strongly recommended.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Zucker.

CPSC 075. Principles of Compiler Design and Construction

(Cross-listed as ENGR 023)

This course introduces the design and construction of language translators for imperative, procedure-oriented programming languages. Topics covered include formal grammars, lexical analysis and finite automata, syntax analysis and pushdown automata, LL and LR parsing, semantic analysis and table handling, error detection and recovery, code generation and optimization, and compiler writing tools.

Prerequisite: CPSC 035 required. One of CPSC 033 or CPSC 052 is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Newhall.

CPSC 081. Adaptive Robotics

This seminar addresses the problem of controlling robots that will operate in dynamic, unpredictable environments. In laboratory sessions, students will work in groups to program robots to perform a variety of tasks such as navigation to a goal, obstacle avoidance, and vision-based tracking. In discussion sessions, students will examine the major paradigms of robot control through readings from the primary literature with an emphasis on adaptive approaches.

Prerequisite: CPSC 035 required. CPSC 063 is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Spring 2014. Meeden.

CPSC 082. Mobile Robotics

(See ENGR 028)

Prerequisites: ENGR 015 or CPSC 035 required. Linear Algebra is strongly recommended.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Zucker.

CPSC 087. Parallel and Distributed Computing

This course covers a broad range of topics related to parallel and distributed computing, including parallel and distributed architectures and systems, parallel and distributed programming paradigms, parallel algorithms, and scientific and other applications of parallel and distributed computing. In lecture/discussion sections, students examine both classic results as well as recent research in the field. The lab portion of the course includes programming projects using different programming paradigms, and students will have the opportunity to examine one course topic in depth through an open-ended project of their own choosing. Course topics may include: multi-core, SMP, MPP, client-server, clusters, clouds, grids, peer-to-peer systems, GPU computing, scheduling, scalability, resource discovery and allocation, fault tolerance, security, parallel I/O, sockets, threads, message passing, MPI, RPC, distributed shared memory, data parallel languages, MapReduce, parallel debugging, and parallel and distributed applications

Prerequisites: CPSC 035 required. CPSC 045 is recommended.

Lab work required.

1 credit.

Spring 2014. Newhall.

CPSC 091. Special Topics in Computer Science

Subject matter for CPSC 091 is generally dependent on group need or individual interest. The course is normally restricted to upper-level students and offered only when interest and staff availability make it practicable to do so.

Lab work required.

1 credit.

Staff.

CPSC 093. Directed Reading and/or Research Project

A qualified student may undertake a program of extra reading and/or a project in an area of computer science with the permission of a staff member who is willing to supervise.

CPSC 097. Senior Conference

This course provides honors and course majors an opportunity to delve more deeply into a particular topic in computer science, synthesizing material from previous courses. Topics have included data management systems (2010, 2011), computer perception (2008, 2009), computational geometry and geographic information systems (2006, 2007), computer security (2005), natural language processing (2004); advanced algorithms (2003); networking (2001, 2002); distributed computing

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(2000); evolutionary computation (1998 and 1999); complexity, encryption, and compression (1996); and parallel processing (1995). CPSC 097 is the usual method used to satisfy the comprehensive requirement for a computer science major and the senior honors study requirement for a computer science honors major.

Lab work required.

Writing course.

1 credit.

Fall 2012. Waterman.

CPSC 180. Thesis

CPSC 199. Senior Honors Study

Economics

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JOHN P. CASKEY, Professor
 STEPHEN S. GOLUB, Professor
 ROBINSON G. HOLLISTER, Professor ¹
 PHILIP N. JEFFERSON, Professor
 MARK KUPERBERG, Professor ¹
 ELLEN B. MAGENHEIM, Professor and Chair
 STEPHEN A. O'CONNELL, Professor
 AMANDA BAYER, Associate Professor
 ERIN TODD BRONCHETTI, Assistant Professor
 DAVID HUFFMAN, Assistant Professor ³
 TAO WANG, Assistant Professor ³
 VERA BRUSENTSEV, Visiting Assistant Professor
 GARRET CHRISTENSEN, Visiting Assistant Professor and Mellon Post-doctoral Fellow
 THEODORE CRONE, Visiting Professor (part time)
 JOSEPH HARGADON, Visiting Professor (part time)
 NANCY CARROLL, Administrative Assistant

¹ Absent on leave, fall 2012.

³ Absent on leave, 2012–2013.

The Academic Program

The economics curriculum is structured so that students achieve the following goals:

1. Learn and apply models and tools for analyzing economic processes, decisions, and institutions;
2. Analyze and evaluate public policy; and
3. Think critically about the outcomes of public and private economic institutions and systems domestically and globally.

The Economics Department offers a course major, honors major, and honors minor. A course minor is not offered.

Course Major

Requirements

ECON 001 or its equivalent is a prerequisite for all other work in the department. In addition, all majors in economics must satisfy a theory requirement by taking ECON 011 (Intermediate Microeconomics) and ECON 021 (Intermediate Macroeconomics). They must also satisfy a statistics requirement. The statistics requirement is typically satisfied by taking ECON 031. It can alternatively be satisfied, however, by taking ECON 035 (which requires either ECON 031 or STAT 061 as prerequisite), by taking STAT 111 (which requires STAT 061), or by taking STAT 061 in combination with either STAT 011 or STAT 031. STAT 011 and STAT 031 alone are not sufficient.

In order to read the literature in economics critically, a knowledge of elementary calculus is extremely useful. Beginning with the 2012–2013 academic year, students will need to take MATH 015 (or receive MATH 015 credit or placement out of MATH 015 from the Mathematics Department) prior to taking

ECON 011 or ECON 021. Since ECON 011 and ECON 021 are required for the economics major, MATH 015 is a requirement for the major. Students can take ECON 001, ECON 031, and other courses that do not have ECON 011 or ECON 021 as a prerequisite before they meet the MATH 015 requirement. Students can find further information regarding math placement and credit at: www.swarthmore.edu/NatSci/math_stat/ap_pi.html.

In addition, the department very strongly recommends that students take either MATH 025 or 026 (Basic Calculus). MATH 027 (Linear Algebra), MATH 034 (Several Variable Calculus), and MATH 044 (Differential Equations) are valuable for those intending to focus on the more technical aspects of economics. Students planning to attend graduate school in economics should give serious thought to taking additional mathematics courses, including MATH 063 (Introduction to Real Analysis).

To graduate as a course major, a student must:

1. Have at least eight credits in economics.
2. Meet the theory and statistics requirements. Note: Course students should take these courses before the second semester of their senior year to be prepared for the comprehensive examination. Note also that some seminars and courses have ECON 011, 021, and/or 031 as prerequisites.
3. In the senior year, pass the comprehensive examination given early in the spring semester.

Comprehensive Examination

Course majors must pass the Comprehensive Examination which is given in January or February of each year and covers the theory and

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statistics requirements. The exam is given only once a year and students must take it at Swarthmore College. All students will take the examination in their senior year. The only exception is for students who are graduating early; those students can take the comprehensive exam in the spring semester prior to their final semester at Swarthmore.

Acceptance Criteria

The Course Program:

Except for students who have been granted advanced standing, applicants should have:

1. Completed at least two economics courses at Swarthmore.
2. Have an overall grade average of C or better.
3. Have a grade of B or better in at least one economics course taken at Swarthmore.
4. Should not have any D's or NC's in any economics course. These conditions include the grade equivalent(s) for any course(s) taken Credit/No Credit. [Note: Regarding the "grade of B or better" requirement, a B in a course taken elsewhere may not suffice. Students who expect to satisfy the requirement with course work done at other schools should consult the chair about grade equivalencies ahead of time. For example, an A- is typically required in the case of a course taken in summer school.]

Students have one year from the date of their application to satisfy these requirements. Failure to do so within one year will mean rejection.

Students who wish to apply for a double major must submit a copy of their Sophomore Plan to both departments.

Honors Major

Typically, a student who wants to major in the Honors Program first applies for the program through the Sophomore Plan. In the Sophomore Plan, the student should indicate the intention to apply for the Honors Program and should list all preparations that the student plans to take as part of that program. The student would usually take at least one preparation in the junior year. Approval of a student's Honors Program must be granted by the department. Changes of major and/or honors status can be made at any time by picking up forms and instructions in the Registrar's Office.

The Honors Exam for Majors and Preparations

Honors majors in economics must complete 3 preparations. All preparations in economics consist of 2 credits. Most preparations involve taking a 2 credit seminar, but some preparations may combine a course and a 1 credit seminar. A complete list of preparations, with their prerequisites, appears below.

Culminating Exercise

External examiners will determine a student's Honors performance in an individual preparation based on a 3 hour written exam, an oral exam, and if applicable, a seminar paper. (Honors majors do not take the comprehensive exam given to course majors.)

Acceptance Criteria

Applicants for an honors major should have satisfied all of the requirements for an economics course major and, in addition, should have a straight B or better grade average in economics courses. This condition includes the grade equivalent(s) for any course(s) taken credit/no credit.

Honors Minor

Requirements

Honors minors in economics must complete 1 preparation. Other than satisfying the prerequisites for that preparation, there are no other course requirements.

Culminating Exercise

External examiners will determine a student's honors performance in an individual preparation based on a 3 hour written exam, an oral exam, and if applicable, a seminar paper. (Honors minors do not take the comprehensive exam given to course majors.)

Acceptance Criteria

Applicants for a honors minor should have satisfied all of the requirements for an economics course major and, in addition, should have a straight B or better grade average in economics courses. This condition includes the grade equivalent(s) for any course(s) taken credit/no credit.

Application Process Notes for the Major

Normally, any student planning to major in economics, whether in the Course or Honors Program, applies for the major by submitting a Sophomore Plan in the spring of the Sophomore year. (Except for students who have been granted advanced standing, applicants should have completed at least two economics courses at Swarthmore.) A student who will be away that semester should submit the paper before leaving at the end of the fall semester. In the Sophomore Plan, students should state their reasons for wanting to major in economics along with any associated considerations, and they should indicate the courses and seminars essential to their plan of study. Through the paper, students are preregistered for seminars offered over the following two years; thus, students are strongly urged to select their seminars carefully. Moreover, if a student

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decides to change seminars, the department's administrative assistant should be informed as soon as possible, since entry into oversubscribed seminars is first-come, first-served, with seniors in the Honors Program having absolute priority.

Honors Preparations

ECON 101 Advanced Microeconomics (2 credits)

Prerequisites: ECON 011 and multivariable calculus (MATH 033, 034, or 035).

Enrollment is restricted to juniors and seniors.

ECON 102 Advanced Macroeconomics (2 credits)

Prerequisites: ECON 011 and ECON 021, and multivariable calculus: MATH 033, 034, or 035 (or MATH 025 or 026 with permission of the instructor).

Recommended: MATH 043 or 044.

ECON 122 Financial Economics (2 credits)

Prerequisites: ECON 011, ECON 031 or ECON 035, and MATH 025 or higher calculus.

ECON 135 Advanced Econometrics (1 credit) and ECON 035 Econometrics (1 credit)

Prerequisites: ECON 035 and linear algebra (Math 027, 028, or 028S).

ECON 141 Public Economics (2 credits)

Prerequisite: ECON 011.

Recommended: ECON 021 and ECON 031 (or its equivalent).

ECON 151 International Economics (2 credits)

Prerequisites: ECON 011 and ECON 021.

ECON 165 Behavioral Economics (2 credits)

Prerequisites: ECON 011, ECON 031, and MATH 015 (or a score of 5 in AP Calculus).

Recommended: multivariable calculus (MATH 033, 034, or 035).

ECON 171 Labor and Social Economics (2 credits)

Recommended: ECON 011.

ECON 181 Economic Development (2 credits)

Prerequisites: ECON 011, ECON 021, and either ECON 031, STAT 011, or STAT 031.

Interdisciplinary Majors and Minors including Economics

Certain economics courses can be counted toward programs in black studies, Asian studies, environmental studies, peace and conflict studies, public policy, and gender and sexuality studies.

Advanced Placement/International Baccalaureate Credit

Economics before Swarthmore: The Economics Department offers a one-semester Introduction to Economics course (ECON 001) that is the prerequisite for all further study in economics.

The department does not give credit for work done in economics in secondary schools and it does not give credit for Advanced Placement exams. All students planning to study economics are required to begin with ECON 001 unless granted a waiver by the department. To receive a waiver, students must have a score of 5 on both the Microeconomics *and* Macroeconomics AP exams (or a 6 or 7 on the Economics Higher Level Exam of the International Baccalaureate, or an A on the British A Levels). This waiver does not count as a course credit. Students who receive the waiver cannot enroll in ECON 011 or 021 before taking at least one other economics course.

Work done at a college or university while attending secondary school is eligible for credit subject to the chairperson's normal discretion in giving credit for such work, but only if the work is credited on an official college or university transcript. With respect to satisfying the prerequisite requirements for other economics courses: either semester of a two-semester introductory course alone counts as the equivalent of ECON 001 but if only one of two introductory semesters is taken, the material covered in the other half must be accessed by auditing (subject to the instructor's approval) the relevant parts of ECON 001 or by taking the appropriate intermediate theory course (ECON 011 or ECON 021).

Transfer Credit

Transferring economics credits: Students must consult the department chair before taking a non-Swarthmore course for credit. In turn, when formally requesting a credit transfer, students should always bring evidence—syllabus, papers, and examinations—concerning the content of the course. Problems transferring credit typically arise in connection with courses offered in programs abroad that are labeled as economics though they are in fact courses in law, history, or political science; the department does not accept such credits as being within the domain of economics. It is usually sufficient for partial credit transfer if the course is taught by a qualified economist and is largely analytical in content, as are nearly all courses in economics departments in American colleges and universities.

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Transferring credit for introductory economics: Subject to the department's approval, students may transfer credit for introductory economics taken at other colleges or universities, whether taken in the context of a one or a two semester introductory course.

Transferring credits for business courses:

Students can only apply one course in Accounting toward their 8 course requirement in economics. Business courses taken at the University of Pennsylvania or other universities beyond this cannot be counted toward the eight courses required for an economics major. They can be included as part of the 32 courses required for graduation. Students, however, can receive credit for no more than two such courses. The only exception to this rule is for students who take the equivalent of ECON 033 (Financial Accounting) at another school; the course is not counted against the two allowed business credits, and can be counted as part of the 8 credits needed for the economics major. No credit is given for night school classes at Wharton.

Teacher Certification

For economics majors, the College offers teacher certification in social studies or citizenship through a program approved by the state of Pennsylvania. For further information about specific requirements for Economics students, please refer to the Educational Studies section of the Bulletin.

Additional Matters

Recommended course sequence: Take ECON 001 in the first year. Take ECON 011, 021, and 031 in the sophomore and junior years and certainly before the beginning of the senior year. For students contemplating graduate study in economics, take one or more of: ECON 101, ECON 102, and ECON 135, as well as the Mathematics and Statistics courses discussed at the beginning of this document.

Ranking for entry into seminars: Entry into oversubscribed seminars is first-come, first-served for students in the **Honors Program**, with priority given to seniors, then to juniors. Any places remaining are allocated on the basis of first-come, first-served for students in the Course Program.

Double major in Economics and

Engineering: Double majors may count Operations Research (cross-listed as ECON 032 and ENGR 057) for both majors. It will appear as ENGR 057 on the student's transcript if it is taken to satisfy engineering or both requirements.

Semester or year away: The Economics Department will facilitate study abroad or

elsewhere in the United States.

Correspondingly, it has designed a major that can, without difficulty, be completed in no more than four semesters. Moreover, the department is quite liberal in approving transfer credits for courses offered by economics departments elsewhere. Students should, however, be aware of the following considerations: to graduate with an economics major from Swarthmore, a student must have taken at least two economics courses at Swarthmore and must pass the department's comprehensive exam.

Courses

ECON 001. Introduction to Economics

Covers the fundamentals of microeconomics and macroeconomics: supply and demand, market structures, income distribution, fiscal and monetary policy in relation to unemployment and inflation, economic growth, and international economic relations. Focuses on the functioning of markets as well as on the rationale for and the design of public policy. Prerequisite for all further work in economics. 1 credit.

Each semester. Staff.

ECON 002. First-Year Seminar: Greed

In 1776, Adam Smith wrote in *The Wealth of Nations*, "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest.... The individual intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always worse for society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it." This seminar investigates the degree to which self-interest should be the organizing principle of economic and social organization.

This course counts as 1 of the 8 economics credits needed to fulfill an economics major, but it does not take the place of ECON 001. It, therefore, cannot be used to fulfill the ECON 001 prerequisite for further work in the Economics Department.

Writing course.

1 credit.

Not offered 2012–2013.

ECON 002A. First-Year Seminar: Emerging Market Economies: The BRICS 1900–2020

Will Brazil, Russia, India, and China be the most dominant economies in the world by 2050? Why is South Africa (S) in the group? We study the economic trajectories of these

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countries from roughly 1900, emphasizing the roles of domestic reforms and global markets in spurring human capital accumulation, industrial development, and economic growth. We ask how international organizations like the International Monetary Fund (IMF) and World Trade Organization (WTO) are accommodating the emergence of these countries, and what influence the BRICS are likely to exert on the global governance of trade, aid, finance, and the environment.

This course counts as 1 of the 8 economics credits needed to fulfill an economics major, but it does not take the place of ECON 001. It, therefore, cannot be used to fulfill the ECON 001 prerequisite for further work in the Economics Department.

1 credit.

Fall 2012. O'Connell.

ECON 005. Savage Inaccuracies: The Facts and Economics of Education in America

(Cross-listed as EDUC 069)

This course investigates the relationship between issues of resource allocation and educational attainment. It examines the facts about student achievement, educational expenditure in the United States, and the relationship between them. It studies such questions as: Does reducing class size improve student achievement? Does paying teachers more improve teacher quality and student outcomes? The course also investigates the relationship between educational attainment and wages in the labor market. Finally, it analyzes the effects of various market-oriented education reforms such as vouchers and charter schools.

Prerequisites: ECON 001 and any statistics course (or the consent of the instructor). EDUC 014 is strongly recommended.

Eligible for PPOL credit.

1 credit.

Not offered 2012–2013.

ECON 011. Intermediate Microeconomics

Provides a thorough grounding in intermediate-level microeconomics. The standard topics are covered: behavior of consumers and firms, structure and performance of markets, income distribution, general equilibrium, and welfare analysis. Students do extensive problem solving both to facilitate learning microeconomic theory and its applications.

Prerequisites: ECON 001 and MATH 015.

1 credit.

Fall 2012. Magenheimer.

ECON 012. Game Theory and Strategic Behavior

How should one bargain for a used car or mediate a contentious dispute? This course is an introduction to the study of strategic behavior and the field of game theory. We analyze situations of interactive decision making in which the participants attempt to predict and to influence the actions of others. We use examples from economics, business, biology, politics, sports, and everyday life.

Prerequisite: ECON 001.

Eligible for PEAC credit.

1 credit.

Fall 2012. Bayer.

ECON 021. Intermediate Macroeconomics

The goal of this course is to give the student a thorough understanding of the actual behavior of the macroeconomy and the likely effects of government stabilization policy. Models are developed of the determination of output, interest rates, prices, inflation, and other aggregate variables such as fiscal and trade surpluses and deficits. Students analyze conflicting views of business cycles, stabilization policy, and inflation/unemployment trade-offs.

Prerequisites: ECON 001 and MATH 015.

Freshmen need the consent of the professor.

1 credit.

Spring 2013. Kuperberg.

ECON 022. Financial Economics

This course analyzes the ways that firms finance their operations. It discusses the organization and regulation of financial markets and institutions. It examines theories explaining asset prices and returns, and it discusses the function and pricing of options and futures contracts.

Prerequisite: ECON 001 and ECON 031, STAT 031, or STAT 061.

1 credit.

Fall 2012. Caskey.

ECON 027. Antitrust Legislation and Regulation

This course provides an introduction to the interaction between economic theory and the political process from both a domestic and an international perspective. Topics include the provision of public goods, taxes and subsidies, competition in the marketplace, and the effects of market power and rent-seeking behavior on the political system. Emphasis throughout will be on the application of economic theory to current events.

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Prerequisite: ECON 001.

1 credit.

Not offered 2012–2013.

ECON 028. Economics of Latin America

Recent developments in the global economy present an exciting opportunity for assessing the challenges facing the economies of the western hemisphere. The objective of the course is to encourage students to think critically about the role of institutions, the effects of government intervention in the economy, and how public policy affects a specific economy in particular and the global economy in general. A number of issues pertaining to Latin America are explored and evaluated: economic growth and development, financial crises, labor market institutions, and trade policy.

Prerequisite: ECON 001.

Eligible for LASC credit.

1 credit.

Spring 2013. Brusentsev.

ECON 031. Introduction to Econometrics

This course provides an introduction to the theory and practice of applied quantitative analysis in economics. Following a brief discussion of probability, statistics, and hypothesis testing, this course emphasizes using regression analysis to understand economic relationships and to test their statistical significance. Computer exercises provide practical experience in using these quantitative methods.

Prerequisite: ECON 001.

1 credit.

Fall 2012. Bronchetti. Spring 2013. Christensen.

ECON 032. Operations Research

(See ENGR 057)

1 credit.

Fall 2012. McGarity.

ECON 033. Financial Accounting

This course is designed to provide students with an intermediate level study of corporate accounting theory and practice as it falls within the framework of United States generally accepted accounting principles (GAAP). A major focus of the course is how accounting provides information to various user groups so that they can make more informed decisions. In particular, students will learn the steps in the accounting cycle leading up to the preparation and analysis of corporate financial statements. Students are also exposed to some of the fundamental differences between federal tax rules and external financial reporting requirements and are made aware of the organizations that influence and contribute to

the body of knowledge in financial accounting. Finally, ethical issues that may be confronted by the accountant are also discussed throughout the course. (This course cannot be used to satisfy the College's distribution requirements.)

Prerequisite: ECON 001.

1 credit.

Spring 2013. Hargadon.

ECON 035. Econometrics

Quantitative methods used in estimating economic models and testing economic theories are studied. Students learn to use statistical packages to apply these methods to problems in business, economics, and public policy.

Prerequisite: ECON 001 and ECON 031 or STAT 061.

1 credit.

Fall 2012. Jefferson.

ECON 041. Public Economics

This course focuses on government expenditure, tax, and debt policy. A major part of the course is devoted to an analysis of current policy issues in their institutional and theoretical contexts. The course will be of most interest to students having a concern for economic policy and its interaction with politics.

Prerequisite: ECON 001.

Recommended: ECON 011.

Eligible for PPOL credit.

1 credit.

Spring 2013. Bronchetti.

ECON 042. Law and Economics

The purpose of this course is to explore the premises behind the use of utilitarian constructs in the analysis of public policy issues. In particular, the appropriateness of the growing use of economic methodology will be examined through an intensive study of issues in property, tort, contract, and criminal law.

Prerequisite: ECON 001.

Recommended: ECON 011.

Eligible for PPOL credit.

1 credit.

Not offered 2012–2013.

ECON 044. Urban Economics

The topics covered in this course include the economic decline of central cities, transportation policies, local taxation, theories of urban growth patterns, local economic development initiatives, and the economics of land use and housing.

Prerequisite: ECON 001 and ECON 031, STAT 031, or STAT 061.

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1 credit.

Spring 2013. Caskey.

ECON 051. The International Economy

This course surveys the theory of trade (microeconomics) and of the balance of payments and exchange rates (macroeconomics). The theories are used to analyze topics such as trade patterns, trade barriers, flows of labor and capital, exchange-rate fluctuations, the international monetary system, and macroeconomic interdependence. Prerequisites: ECON 011 and ECON 021.

Eligible for PPOL credit.

1 credit.

Spring 2013. Golub.

ECON 054. Global Capitalism Since 1920

This course will study global capitalism over the last century, focusing on the interplay between events, economic theories and policies. The issues to be examined include: financial market booms and busts; business cycles; inequality; the social welfare state; technological change and economic growth; and international trade and financial arrangements. The time period covers: the Roaring Twenties; the Great Depression, the post war Golden Age (1945–1973); the stagflation of the 1970s; the Thatcher-Reagan-Greenspan-Bush era of market liberalization (1980–2007); and the financial crisis and Great Recession of 2007–2010. Economic theories include: the classical laissez-faire view; Schumpeter's theory of "creative destruction"; Keynes and the "neo-classical synthesis" advocating a mixed economy; Minsky's theory of financial instability; Friedman, the efficient-markets hypothesis, and the "new classical" critiques of government interventions; and emerging ideas in response to the present crisis. The course will chronicle and compare economic policy and performance of the United States, Europe, Japan, and the developing world (Asia, Latin America, Africa).

Prerequisite: ECON 001.

1 credit.

Fall 2012. Golub.

ECON 063. Public Policies in Practice: Establishing What Works and for Whom

Participants in this course will examine research on specific policy interventions designed to change outcomes for individuals, corporations, and communities. Particular focus will be on attempts to establish whether such policy interventions can cause changes in outcomes for individuals, corporations, or communities. In recent decades, random assignment/experimental designs have increasingly been applied to estimate the impact of changes in policies on employment, welfare,

housing, education, policing, public health, and community development. Social policy experiments and alternative methods to examine cause and effect will be covered, with emphasis on actual examples from the previously mentioned fields. Specific issues in design, implementation of such studies, the analysis of results, and translation to the policy context will be reviewed. Students will meet with selected analysts who carry out these types of studies. Students will do some analysis of data generated from quantitative studies of what works and for whom.

Prerequisite: ECON 001.

1 credit.

Not offered 2012–2013.

ECON 067. Experimental Economics

This course will cover some of the main research topics in economics that have been studied with laboratory and field experiments, such as behavior in competitive markets, provision of public goods, biases in individual decision-making, neural underpinnings of economic choice, and preferences regarding risk, time, and fairness. Students will be introduced to techniques for conducting economic experiments, and will design their own experiment as part of course assignments.

Prerequisite: ECON 001 and ECON 031, or STAT 011, or a score of 4 or 5 in AP Statistics.

Recommended: ECON 011.

1 credit.

Not offered 2012–2013.

ECON 073. Race, Ethnicity, and Gender in Economics

This course focuses on the role of difference in economic systems. In this course, we learn how to apply the theoretical and empirical tools of economics to analyze the economic status of women and of various racial and ethnic groups in the United States, and we explore the various sources of, and solutions to, persistent economic inequality. We also examine the roles of race, ethnicity, and gender in the development of economic theory and policy.

Prerequisite: ECON 001.

Eligible for BLST, GSST, or PPOL credit.

1 credit.

Fall 2012. Bayer.

ECON 075. Health Economics

This course applies the tools of microeconomic analysis to the health care industry. We will analyze the determinants of demand for and supply of health care, including the relationship between demographic variables, health status, and health care consumption. The structure and behavior of the major components of the supply side will be studied, including physicians,

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hospitals, and insurance companies. The variety of ways in which the government intervenes in the health care sector—regulation, antitrust, social insurance, and direct provision—will be considered. Finally, we will study some more specialized topics, including the intersection of bioethics and economics, mental health economics, and international health system comparisons. Students will write a series of short papers, examining medical, economic, and policy considerations related to a health problem or issue.

Writing course.

Prerequisite: ECON 001.

1 credit.

Not offered 2012–2013.

ECON 076. Environmental Economics

Introduction to basic concepts and methods used in evaluating environmental benefits and costs and in assessing mechanisms for allocating environmental resources among present and future uses, with due attention to seemingly noneconomic concerns. Specific topics include pollution and environmental degradation; use of exhaustible and renewable resources; management of air, water, and energy resources; sustainable economic growth; and international resource management.

Prerequisite: ECON 001.

Eligible for ENVS or PPOL credit.

1 credit.

Not offered 2012–2013.

ECON 081. Economic Development

A survey covering the principal theories of economic development and the dominant issues of public policy in low-income countries. Topics include the determinants of economic growth and income distribution, the role of the agricultural sector, the acquisition of technological capability, the design of poverty-targeting programs, the choice of exchange rate regime, and the impacts of international trade and capital flows (including foreign aid).

Prerequisite: ECON 001.

Eligible for ASIA, BLST, PEAC, or PPOL credit.

1 credit.

Spring 2013. Christensen.

ECON 082. Political Economy of Africa

A survey of the post-independence development experience of Sub-Saharan Africa. We study policy choices in their political and institutional context, using case-study evidence and the analytical tools of positive political economy. Topics include development from a natural resource base, conflict and nation building, risk management by firms and households, poverty-reduction policies,

globalization and trade, and the effectiveness of foreign aid.

Prerequisite: ECON 001.

Eligible for BLST, PEAC, or PPOL credit.

1 credit.

Spring 2013. O'Connell.

ECON 099. Directed Reading

With consent of a supervising instructor, individual, or group study in fields of interest not covered by regular course offerings.

Fall or spring semester. Staff.

Seminars

ECON 101. Advanced Microeconomics

Subjects covered include consumer and producer theory, optimization and duality, general equilibrium, risk and uncertainty, asymmetric information, and game theory.

Prerequisites: ECON 011 and multivariable calculus (MATH 033, 034, or 035). Enrollment is restricted to juniors and seniors.

2 credits.

Spring 2013. Bayer.

ECON 102. Advanced Macroeconomics

Subjects covered include microfoundations of macroeconomics, growth theory, rational expectations, and New Classical and New Keynesian macroeconomics. Extensive problem solving, with an emphasis on the qualitative analysis of dynamic systems.

Prerequisites: ECON 011, ECON 021, and multivariable calculus (MATH 033, 034 or 035, or MATH 025 or 026 with permission of the instructor).

Recommended: MATH 043 or 044.

2 credits.

Fall 2012. O'Connell.

ECON 122. Financial Economics

This seminar analyzes the ways that firms finance their operations. It discusses the organization and regulation of financial markets and institutions. It examines theories explaining asset prices and returns, and it discusses the function and pricing of options and futures contracts.

Prerequisites: ECON 011, ECON 031 or ECON 035, and MATH 025 or higher calculus.

2 credits.

Fall 2012. Caskey.

ECON 135. Advanced Econometrics

Quantitative methods used in estimating economic models and testing economic theories are studied. Students learn to use statistical packages to apply these methods to problems in business, economics, and public policy.

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Students will also evaluate studies applying econometric methods to major economic issues. An individual empirical research project is required.

Prerequisites: ECON 035 and linear algebra (MATH 027, 028 or 028S).

1 credit.

Spring 2013. Jefferson.

ECON 141. Public Economics

This seminar focuses on the analysis of government expenditure, tax, and debt policy. A major part of the seminar is devoted to an analysis of current policy issues in their institutional and theoretical contexts. The seminar will be of most interest to students having a concern for economic policy and its interaction with politics.

Prerequisite: ECON 011.

Recommended: ECON 021 and ECON 031 (or its equivalent).

Eligible for PPOL credit.

2 credits.

Spring 2013. Bronchetti.

ECON 151. International Economics

Both microeconomics and macroeconomics are applied to an in-depth analysis of the world economy. Topics include trade patterns, trade barriers, international flows of labor and capital, exchange-rate fluctuations, the international monetary system, financial crises, macroeconomic interdependence, the roles of organizations such as the World Trade Organization and International Monetary Fund, and case studies of selected industrialized, developing, and transition countries.

Prerequisites: ECON 011 and ECON 021.

Eligible for PPOL credit.

2 credits.

Spring 2013. Golub.

ECON 165. Behavioral Economics

Economic theory is based on assumptions regarding the form of individuals' preferences, ability to optimize, weighting of probabilities in risky choice, and belief formation. This course is an introduction to behavioral economics, a field focused on making these behavioral assumptions more realistic. Strategies for improving realism include drawing on the relevant literature in psychology, conducting new experiments, or using existing field data. The course will cover, at an advanced level, topics in economics where research in behavioral economics has led to revision or questioning of aspects of standard economic theory, and to a better description of actual economic behavior. For example, we will discuss the role of self-control problems in savings behavior, and the relevance of

preferences for fairness for explaining the functioning of labor markets.

Prerequisites: ECON 011, ECON 031, and MATH 015 (or a score of 5 in AP Calculus).

Recommended: Multivariable calculus (MATH 033, 034, or 035).

2 credits.

Not offered 2012–2013.

ECON 171. Labor and Social Economics

Students discuss such topics as the organization of work within firms, labor market operations, unions and labor relations, unemployment and macroconditions, economic analysis education, health care, housing, and discrimination, determinants of income inequality, and government policies with respect to health, education, and welfare.

Prerequisite: ECON 001.

Recommended: ECON 011.

Eligible for BLST or PPOL credit.

2 credits.

Spring 2013. Hollister.

ECON 181. Economic Development

The economics of long-run development in Africa, Asia, and Latin America. We cover the leading theories of growth, structural change, income distribution, and poverty, with particular attention to development strategies and experience since World War II. Topics include land tenure and agricultural development, rural-urban migration, industrialization, human resource development, poverty targeting, trade and technology policy, aid and capital flows, macroeconomic management, and the role of the state. Students write several short papers examining the literature and a longer paper analyzing a particular country's experience.

Prerequisites: ECON 011, ECON 021, and either ECON 031, STAT 011, or STAT 031.

Eligible for ASIA, BLST, or PPOL credit.

2 credits.

Fall 2012. O'Connell.

ECON 198. Thesis

With consent of a supervising instructor, honors majors may undertake a senior thesis for double credit.

Each semester. Staff.

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K. ANN RENNINGER, Professor and Chair
 LISA SMULYAN, Professor
 DIANE DOWNER ANDERSON, Associate Professor
 CHERYL JONES-WALKER, Assistant Professor
 MARGARET INMAN LINN, Visiting Assistant Professor (part time)
 ELAINE ALLARD, Visiting Instructor
 KAE KALWAIC, Administrative Assistant
 CATHERINE DUNN, Placement and Clearance Coordinator

The Academic Program

The Educational Studies Department at Swarthmore engages students in the investigation of educational theory, policy, research and practice from a variety of disciplinary perspectives. We prepare students to work in educational research or policy, to enter the teaching profession and/or to do graduate study in educational studies or a related field. The department encourages undergraduates to think critically and creatively about the processes of teaching and learning and about the place of education in society. The department is also committed to preparing students to address education related needs in an era of rapidly increasing racial, ethnic and linguistic diversity and technological change to develop students' abilities to participate fully in civic, cultural and economic arenas. Both introductory and upper level courses in the department draw on theory and research in anthropology, economics, history, political science, psychology and sociology. Students interested in educational studies at Swarthmore may complete the requirements for teacher certification and/or design a special major in educational studies and another discipline in either the Course or Honors Program.

Special Major

Students may undertake special majors in the Course or the Honors Program after receiving approval from the Educational Studies Department and the department of another discipline. There are no majors in educational studies. In the *Department of Educational Studies Handbook*, additional information can be found regarding the following special majors with educational studies: biology, chemistry, English literature, French, German, history, linguistics, mathematics/statistics, music, physics, political science, psychology, Russian, sociology/anthropology, and Spanish. Special Majors with other disciplines may also be pursued upon approval from both departments. The special major usually requires ten to twelve credits, at least 5 of which must be in educational studies. Each partnering department also provides several requirements to complete the degree. In the case of all special majors involving educational studies, both departments

collaborate in advising the student, and a thesis or a comprehensive examination integrating work in the two fields is required. EDUC 016: Practice Teaching and EDUC 017: Curriculum and Methods Seminar will not usually be counted as part of a special major. The prerequisite for acceptance to the special major program is EDUC 014: Introduction to Education.

Minors

The Educational Studies Department supports two kinds of minors:

Teaching and field-based minor. Students complete educational studies credits that focus on educational practice and the integration of theory and practice in school placements. This minor will normally be pursued by students completing required credits for teacher certification who are not pursuing a special major with educational studies (see information on required courses work for elementary and secondary certification below).

Educational studies minor. Students take at least five credits in discipline-based educational studies courses. For this minor, students identify a focus and describe how two or more of the courses or seminars they propose for the minor are related to this focus. Possible foci include but are not limited to Educational Policy, Educational Psychology, School and Society, Urban Education, Environmental Education, Literacy, Gender and Education, and Special Education. Note: EDUC 016 and 017 do not count toward an educational studies minor.

Students pursuing a minor complete the requirements of the major department for the senior comprehensive exercise.

Interdisciplinary Programs

Specific courses in educational studies can be used to meet requirements in black studies, environmental studies, public policy, and gender and sexuality studies. Please see the course listings for each program, or consult with the program coordinator.

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Honors Program

Educational studies offers an Honors Program as part of a special major and as a minor.

Special Majors in Honors

Educational studies offers a special major honors option in conjunction with English, linguistics, political science, psychology and sociology and anthropology (and other departments with the approval of both educational studies and the second department). Special major Honors Programs will involve one and a half to three two-credit preparations in educational studies. The following options are possible: two and a half preparations in educational studies and one and a half in the other discipline, or one and a half preparations in educational studies and two and a half in the other discipline. (All special majors do a double credit thesis that integrates the two disciplines; the thesis receives one credit from each department.) Students applying to do honors work, as part of a special major must have taken Introduction to Education and at least two other educational studies courses and have an average grade of B+ in their educational studies courses before they will be accepted to the program.

Special major honors preparations in educational studies will consist of the following:

- Thesis. In every case the special major Honors Program will involve a two-credit thesis. This thesis will normally serve as the integrative piece of the special major, in which case the thesis will be supervised and read by faculty members in educational studies and the other department.
- Two-credit educational studies seminar. In order to enroll in seminars, students need to take Introduction to Education and at least one of a specified list of educational studies courses as prerequisites. Each seminar has its own list of prerequisites.
- One-credit educational studies course, plus one-credit attachment or one-credit seminar. These preparations are designed by the student and a supervising faculty member.

Honors Minors

Students completing a minor in educational studies will complete a total of five credits in Educational Studies, including Introduction to Education, two other educational studies courses and one of the following options. They will also be expected to have a B+ average in their educational studies courses at the conclusion of their course work.

Honors minor preparations offer the following two options:

- A two-credit seminar. In the case of the minor, students will be expected to do three courses in educational studies as prerequisites

for taking a seminar, including Introduction to Education and any elective course(s) required for each seminar.

Or

- A one-credit educational studies course and a one-credit attachment or one-credit seminar. Students choosing this option will have taken Introduction to Education and at least two other courses in educational studies in addition to the course and attachment.

All honors students (majors and minors) in educational studies write a short intellectual autobiography that is submitted to the honors examiner. No credit is attached to this paper, which is completed in the spring of the senior year.

External Exams

The External Exams will take one of two forms:

- Two-credit thesis and oral exam. The thesis will be sent to the examiner in April and students will participate in an hour-long oral exam in May. All examiners in the student's special major program will be invited to participate in the oral exam, if they desire.

Or

- Analytic essay. In April, after receiving a copy of the syllabus for the two-credit preparations, examiners prepare an essay exam based on the syllabus. As part of this process, they may send the students a problem set, a case and/or additional readings relevant to the work they have undertaken in their preparation. In their written exam, students respond to the problem set or case materials in one or more of the essays.

All educational studies honors exams will be written in the Educational Materials Center. Students may have notes on the case or problem set with them while they are writing and may write for up to five hours. A 30-45 minute oral exam will follow in May. More information on Honors options and requirements may be found in the *Department of Educational Studies Handbook*.

Application Process Notes for the Major or the Minor

Those interested in pursuing a major, minor, and/or teacher certification through the department should arrange a meeting with the chair of the department and/or talk with a faculty member whom they have had in class and arrange a meeting to discuss their plans. Students should review the *Department of Educational Studies Handbook*, which offers specific details about program options. Following these steps, students complete and submit a Sophomore Plan to the department.

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Advanced Placement/International Baccalaureate Credit

The department accepts AP and IB credits to meet some state requirements for teacher certification. Please refer to the certification section of the *Department of Educational Studies Handbook*.

Transfer Credit

Transfer credit is accepted once a student has completed the Introduction to Education course in the department, provided that a syllabus and course work is presented to the department for review. It is possible that only partial credit will be awarded for work submitted as transfer credit and that some additional work may be requested. Such a request would be discussed with the student.

Off-Campus Study

Students requesting credit in educational studies for course or fieldwork done abroad (or at another institution in the United States) must take at least the Introduction to Education course (ED 014) at Swarthmore. This course may be taken before or after study abroad.

The department sponsors two study abroad programs. One is at the Cloud Forest School in Costa Rica (www.swarthmore.edu/x9200.xml), through which students can do a school-based internship, an intercultural credit of Spanish language instruction, and an independent study. The other program is through the University of Capetown, South Africa (www.swarthmore.edu/x20601.xml), and it focuses on environmental issues and educational issues (e.g., literacy, equity, intersections between schools, communities, and the environment) in South Africa.

Field-based Learning Opportunities

Bridging research and practice is a goal for courses and seminars in the department. Almost all courses and seminars have a distinctive fieldwork component, in which students are directly involved with practice. Students can request fieldwork placements in urban, suburban or rural communities and choose from public, charter or private school settings. Students are encouraged to use the field placements as an opportunity to explore a range of school types and populations.

The Community Outreach Practicum course (EDUC 070) is offered every two years and is specifically designed to provide students with support for working in educational and community-based settings.

Teacher Certification

Swarthmore offers a competency-based teacher preparation program that is transferable to 48 other states for students who seek secondary certification. Individual student programs are designed with guidance from representatives from the discipline in which the student is being certified and members of the educational studies faculty. All students seeking certification must meet Swarthmore College's distribution requirements in the humanities, natural sciences and social sciences and the requirements for a major or special major.

State requirements

Students must have completed 48 credit hours (or 12 Swarthmore College credits) to be admitted to the teacher certification program. In order to be certified, students must attain an overall grade point average of 3.0 or meet the 2.8 GPA qualifying score on the appropriate PRAXIS content exam.

In addition, students will present evidence of having completed six credit hours in college level math and three credit hours in college level English literature. One Swarthmore College course is equivalent to four credit hours. In the case of the math requirement, courses outside of mathematics/statistics that fulfill the natural science division distribution requirements can be substituted. AP credit for scores of four or five in English literature, calculus AB or AB/BC or statistics will be accepted as equivalent to one Swarthmore College course. Scores of six or seven on the Higher Level IB exams are also considered equivalent to one course. Math scores of 560 or better on the SAT level I or SAT II math level 1C or IIC exam will be accepted as the equivalent of three credit hours. A CLEP test can also be used to meet the math or English requirements. Certification requires three additional credit hours in English composition, covered by the College's general distribution requirement of three Writing courses.

During practice teaching, students complete the PRAXIS and PAPA certification exams

Secondary certification, including foreign language certification

Swarthmore College offers competency-based teacher certification programs, approved by the State of Pennsylvania and portable to 48 other states, in biology, chemistry, citizenship (for history, economics and political science majors), English, French, German, mathematics, physics, Russian, Spanish, social science (for psychology and sociology and anthropology majors), and social studies (for economics, history, political science, psychology, and sociology and anthropology majors). Secondary teaching certification

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applies to grades 7–12. Certification in one of the foreign language areas qualifies graduates to teach that language to grades K–12.

In order to be certified, students must complete a major, a special major, or its equivalent in the department associated with the certification. It is important for students to review the subject specific requirements for their desired area of certification, which often shape decisions made regarding major or special major coursework. Information on subject specific requirements can be found in the *Educational Studies Handbook*. Certification also requires a total of seven and a half course credits in educational studies, including:

- Introduction to Education, EDUC 014
- Educational Psychology, EDUC/PSYC 021
- Adolescence, EDUC/PSYC 023
- Adolescents and Special Education (.5 credit), EDUC 023a
- Special Education, EDUC 026
- Language Minority Education, EDUC 053
- Practice Teaching, EDUC 016 (2 credits)
- Curriculum and Methods, EDUC 017 (2 credits)

Introduction to Education, EDUC 014, should be taken by the end of sophomore year, if at all possible. Practice Teaching, EDUC 016, and the Curriculum and Methods Seminar, EDUC 017, are regularly taken during the first or second semester of the senior year, or in a ninth semester after graduation. Since student teaching is a full semester's course load, students should not plan on taking additional courses while student teaching.

Students preparing for certification must attain a grade point average of B or above in their course work; in order to do Practice Teaching, they must have at least a B- in Introduction to Education and the approval of all educational studies faculty who have taught them. Formal admittance to the certification program follows registration in Practice Teaching and the Curriculum and Methods Seminar.

As part of the certification program, students practice teach for 14 weeks and receive weekly supervision through the College. Placement for practice teaching is available in a range of public (urban and suburban) and private schools, including several Friends schools in the Philadelphia area.

Elementary certification

Certification in elementary education (Pre-K through 8th grade) is not offered by Swarthmore College. However, if students complete required courses at Swarthmore and 14 weeks of practice teaching in an elementary school, they can receive certification through Eastern College, with which Swarthmore has a

collaborative arrangement. Required educational studies courses for elementary certification include:

- Introduction to Education, EDUC 014
 - Educational Psychology, EDUC/PSYC 021
 - Developmental Psychology, PSYC 039 or Psychology and Practice, EDUC 121
 - Teaching Young Diverse Learners, EDUC 042
 - Language Minority Education, EDUC 053
 - Special Education, EDUC/PSYC 026
 - Practice Teaching, EDUC 016 (2 credits)
 - Curriculum and Methods, EDUC 017 (2 credits)
- In addition, students take two additional elementary methods courses in Language Arts and Reading at Eastern College Summer School (from mid May-late June) for a total cost of \$3,290 (rate, spring 2012).

Students pursuing elementary certification are also expected to demonstrate competence in math, science, social studies, and language arts in their other course work and are urged to consult with the chair of the Educational Studies Department at Swarthmore College regarding course selections.

Ninth semester program

Students who have completed all the requirements for certification in their discipline and in educational studies, except for Practice Teaching and the Curriculum and Methods Seminar, may apply to return following graduation to complete the teacher certification program during a ninth semester. During this semester, they take Practice Teaching and the Curriculum and Methods Seminar and pay for one course of tuition and student fees. They are not eligible for campus housing. Further information on the ninth semester option is available in the Educational Studies Department office.

Courses

EDUC 001C. The Writing Process: Pedagogy and Practice

(See ENGL 001C)

Fall 2012. Gladstein.

EDUC 014. Introduction to Education

This course provides a survey of issues in education within an interdisciplinary framework. In addition to considering the theories of individuals such as Dewey, Skinner, and Bruner, the course explores some major economic, historical, psychological, and sociological questions in American education and discusses alternative policies and programs. Topics are examined through readings, software, writing, discussion, and hands-on

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activity. Fieldwork is required. This course provides an opportunity for students to explore their interests in educational policy, student learning, and teaching. This course, or the first-year seminar EDUC 014F, is required for students pursuing teacher certification.

Writing course.

1 credit.

Each semester. Staff.

EDUC 014F. First-Year Seminar: Introduction to Education

This seminar will draw on materials from the disciplines of psychology, sociology, philosophy, history, and political science to address questions about American education. Topics are examined through readings, software, writing, discussion, and hands-on activity. Fieldwork is required. This course fulfills the prerequisite for further coursework in educational studies and provides an opportunity for students to explore their interests in educational policy, student learning, and teaching. This seminar, or the EDUC 014 course, is required for students pursuing teacher certification.

Writing course.

1 credit.

Each semester. Staff.

EDUC 016. Practice Teaching

This course involves supervised full-time teaching in either secondary or elementary schools for students pursuing teacher certification. Students pursuing certification must take EDUC 017 concurrently. (Single-credit practice teaching may be arranged for individuals not seeking certification.)

2 credits.

Fall 2012. Smulyan.

EDUC 017. Curriculum and Methods Seminar

This seminar is taken concurrently with EDUC 016. Readings and discussion focus on the applications of educational research and theory to classroom practice. Course content covers: lesson planning; classroom management; inquiry-oriented teaching strategies; questioning and discussion methods; literacy; the integration of technology and media; classroom-based and standardized assessments; instruction of special needs populations; topics in multicultural, nonracist, and nonsexist education; and legislation regarding the rights of students and teachers. As part of the seminar, students take a series of special methods workshops in their content area. Required for students pursuing teacher certification.

2 credits.

Fall 2012. Smulyan.

EDUC 021. Educational Psychology

(Cross-listed as PSYC 021)

This course focuses on issues in learning and development that have particular relevance to understanding student thinking. Research and theoretical work on student learning and development provide the core readings for the course. In addition, students participate in a laboratory section that involves consideration of learning and motivation in an alternative public school classroom and provides an introduction to research methods. Required for students pursuing teacher certification.

1 credit.

Fall 2012. Renninger.

EDUC 023. Adolescence

(Cross-listed as PSYC 023)

In this course, students examine adolescent development from psychological, sociological, and life-span perspectives, reading both traditional theory and challenges to that theory that consider issues of race, class, gender, ethnicity, and sexual orientation. During the first part of the term, students explore various aspects of individual development (e.g., cognitive, affective, physiological, etc.). The second part focuses on the adolescent's experience in a range of social contexts (e.g., family, peer group, school, etc.). Required for students pursuing teacher certification.

Prerequisite: EDUC 014 or permission of the instructor.

1 credit.

Spring 2013. Smulyan.

EDUC 023A. Adolescents and Special Education

In this half credit attachment to EDUC23, Adolescence, students will focus on meeting the needs of diverse adolescent learners. In particular, students will examine the unique psycho-social interactions between adolescents receiving special education services, their parents and the educators who work with them. Students will also explore strategies for addressing specific cognitive and academic needs of these adolescents in literacy, content area learning, and transitions out of school. Fieldwork is optional. Required for students pursuing secondary teacher certification.

Prerequisite: EDUC 026/PSYCH 026 (can be taken concurrently) or permission of the instructor. EDUC 023 can be taken concurrently with EDUC 023A.

Available as credit/no credit only.

0.5 credit.

Fall 2012. Linn.

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EDUC 026. Special Education: Issues and Practice

(Cross-listed as PSYC 026)

This course is designed to provide students with a critical overview of special education, including its history, the classification and description of exceptionalities, and its legal regulation. Major issues related to identification, assessment, educational and therapeutic interventions, psychosocial aspects, and inclusion are examined. Course includes a field placement. Required for students pursuing teacher certification.

1 credit.

Fall 2012. Linn.

EDUC 041. Educational Policy

This course explores issues in the design, implementation, and evaluation of educational policy at the federal, state, and local levels in light of the ongoing historical and cultural debates over educational policy. It will examine a range of current policy topics, including school finance, issues of adequacy and equity, the standards movement, systemic reform, testing and accountability, varieties of school choice, early childhood education, immigrant and bilingual education, and special education from the perspectives of several social science disciplines and political perspectives.

1 credit.

Not offered 2012–2013.

EDUC 042. Teaching Diverse Young Learners

This course explores the ways children learn in classrooms and construct meaning in their personal, community, and academic lives. The course is framed by theories of learning as transmissionist, constructivist, and participatory. Students will draw on ethnographies, research, their own learning histories, classroom observations, and positioning as novice learners to create optimal learning environments for diverse learners including but not limited to English-language learners, socioeconomically disadvantaged populations, culturally non-mainstream students, students with learning differences and disabilities, and students with socioemotional classifications. Fieldwork is required. Required for elementary certification.

Writing course.

1 credit.

Fall 2012. Linn.

EDUC 045. Literacies and Social Identities

This course explores the intersections of literacy practices and identities of gender, race, class, religion, ethnicity, and sexual orientation within communities of practice. It includes but

is not limited to school settings. Students will work with diverse theory and analytical tools that draw on educational, anthropological, historical, sociological, linguistic, fictional, visual, popular readings and “scenes of literacy” from everyday practice. Fieldwork includes a Learning for Life partnership, tutoring, or community service in a literacy program.

Writing course.

1 credits.

Fall 2013.

EDUC 053. Language Minority Education (Cross-listed as LING 053)

This course examines the multifaceted issues facing English learners in U.S. schools. Course topics include theories of second language acquisition and bilingualism, the history of bilingual education in the United States, educational language policies and the impact of the English-only movement, and practical approaches to teaching linguistic minority students. Course readings draw from relevant literature in sociolinguistics, language policy, language acquisition, educational anthropology, and language pedagogy. Through fieldwork and small group projects, students have the opportunity to explore issues particular to a language minority population of their choice. Required for students pursuing teacher certification.

1 credit.

Spring 2013. Allard.

EDUC 054. Oral and Written Language (See LING 054)

Prerequisite: LING 001, 040, 045, or 050.

1 credit.

Not offered 2012–2013. Napoli.

EDUC 064. Comparative Education

This course examines key issues and themes in education as they play out in schools and nations around the world. We will explore the roles of local, national, and international actors and organizations in the construction of educational goals and practice, using case studies and country studies to look for the interplay between local context and globalized movements in education. Topics will include immigration and schooling, equity, literacy, curriculum goals and constructs, teachers and teaching, and education in areas of conflict. Prerequisite: EDUC 014 or permission of the instructor.

1 credit.

Fall 2012. Smulyan.

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EDUC 068. Urban Education

(Cross-listed as SOAN 020B)

This course examines issues of practice and policy, including financing, integration, compensatory education, curricular innovation, parent involvement, bilingual education, high-stakes testing, comprehensive school reform, governance, and multiculturalism. The special challenges faced by urban schools in meeting the needs of individuals and groups in a pluralistic society will be examined using the approaches of education, psychology, sociology, anthropology, political science, and economics. Current issues will also be viewed in historical perspective.

1 credit.

Spring 2013. Jones-Walker.

EDUC 069. Savage Inaccuracies: The Facts and Economics of Education in America

(See ECON 005)

EDUC 014 is required to receive Educational Studies Department credit for this course.

1 credit.

Not offered 2012–2013.

EDUC 070. Outreach Practicum

This course is offered in conjunction with the Lang Center for Civic and Social Responsibility. It is designed to support students involved in educational and community-based outreach in urban settings. Students' volunteer experiences will provide text and case material for course work. Historical grounding in the construction of cities in general, and Chester, PA, in particular, will be provided. Criteria for effective practices will be identified for the range of volunteer roles in community service projects.

0.5 or 1 credit.

Spring 2014. Jones-Walker.

EDUC 071. Introduction to Performing Arts Education: Music

(See DANC 091 and MUSI 091)

EDUC 014 is required to receive Educational Studies Department credit for this course.

1 credit.

Spring 2014. Whitman.

EDUC 072. Foreign Language Teaching and Pedagogy

(See Modern Languages and Literatures)

0.5 credit.

Each semester. Staff.

EDUC 073. Creative Writing Outreach Course

(See ENGL 070L)

1 credit.

Spring 2013. Brown.

EDUC 091A. Special Topics

With permission of the instructor, qualified students may choose to pursue a topic of special interest in education through a field project involving classroom or school practice.

Available as a credit/no credit course only.

0.5 or 1 credit.

Each semester. Staff.

EDUC 091B. Special Topics

With permission of the instructor, students may choose to pursue a topic of special interest by designing an independent reading or project that usually requires a comprehensive literature review, laboratory work, and/or field-based research.

0.5 or 1 credit.

Each semester. Staff.

EDUC 091C. Special Topics (Music Education)

(See MUSI 091C)

Available as a credit/no credit course only.

0.5 credit.

Not offered 2012–2013. Whitman.

EDUC 096–097. Thesis

1 or 2 credits, normally in conjunction with a special major.

Each semester. Staff.

EDUC 098. Psychology and Educational Studies Thesis

1 or 2 credits, normally in conjunction with a special major.

Each semester. Renninger.

Seminars

Honors seminars are open to all students. Priority is given to honors majors and minors.

EDUC 121. Psychology and Practice

This seminar focuses on general developmental principles revealed in and applicable to contexts of practice as well as practical applications of research and theory in developmental psychology. Seminar foci include: (1) use of the literatures in developmental, educational, and social psychology and learning and cognitive science to identify key indicators for assessing changed understanding and motivation; (2) preparation of literature reviews on a topic of each student's choice; and (3) collaborative work on an evaluation research project addressing a "live" issue or problem identified by a local teacher, school, or community organization.

Prerequisites: EDUC 021.

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Writing course.

2 credits (or 1 credit with permission of the instructor).

Not offered 2012–2013.

EDUC 131. Social and Cultural Perspectives on Education

In this seminar, students examine schools as institutions that both reflect and challenge existing social and cultural patterns of thought, behavior, and knowledge production. Seminar participants study and use qualitative methods of research and examine topics including the aims of schooling, parent/school/community interaction, schooling and identity development, and classroom and school restructuring.

Prerequisites: EDUC 014 and an additional course in the 060s.

Writing course.

2 credits.

Spring 2013.

EDUC 151. Literacy Research

This seminar explores theories and methods in the design and implementation of qualitative studies of literacy, evaluation of literacy programs and pedagogy, and study of literacy policies. Students review relevant literature and participate in a field-based collaborative research project or program evaluation.

Prerequisites: EDUC 014 and an additional course in the 040–060s. Either EDUC 042 or 045 is highly recommended.

Writing course.

2 credits.

Not offered 2012–2013.

EDUC 162. Sociology of Education

(Cross-listed as SOAN 162)

This seminar explores connections between schooling and society. The seminar will look at educational policy and practice, applying sociological perspectives to a broad array of educational and social problems. The seminar will examine schools as socializing institutions, the ways in which schooling influences social stratification, social mobility, and adult socioeconomic success. Topics will include unequal access to education, what makes schools effective, dropping out and persisting in school at various levels, ability grouping and tracking, and school restructuring. Fieldwork is required.

Theory course for SOAN majors.

Prerequisite: EDUC 014 and an additional course in the 060s, or permission of the instructor.

2 credits.

Not offered 2012–2013.

EDUC 167. Identities and Education:

This course explores intersections between identities of race, class, gender, sexual orientation and public education in the United States. Readings will draw on the fields of anthropology, legal studies, and cultural studies. Two central frameworks, Cultural Production and Critical Race Theory, will guide consideration of how social structures inform the realities of schooling and how racial, class-based, gendered and sexual identities are formed within the context of schools.

Prerequisites: EDUC 014 and EDUC 068.

2 credits.

Fall 2012. Jones-Walker.

EDUC 180. Honors Thesis

A 2-credit thesis is required for students completing special honors majors including educational studies. The thesis may be counted for 2 credits in educational studies or for 1 credit in educational studies and 1 credit in the other discipline in the student's Honors Program.

2 credits.

Each semester. Staff.

Engineering

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ERIK CHEEVER, Professor
 ERICH CARR EVERBACH, Professor ¹
 NELSON A. MACKEN, Professor
 ARTHUR E. McGARITY, Professor
 LYNNE ANN MOLTER, Professor and Chair
 FARUQ M.A. SIDDIQUI, Professor ²
 TALİ MORESHET, Assistant Professor
 MATTHEW A. ZUCKER, Assistant Professor
 MICHAEL PIOVOSO, Visiting Professor
 ALLAN MOSER, Visiting Associate Professor
 ANN RUETHER, Academic Support Coordinator
 EDMOND JAUDI, Electronics, Instrumentation, and Computer Specialist
 GRANT SMITH, Mechanician
 CASSY BURNETT, Administrative Coordinator

¹ Absent on leave, fall 2012.

² Absent on leave, spring 2013.

The professional practice of engineering requires creativity and confidence in applying scientific knowledge and mathematical methods to solve technical problems of ever-growing complexity. The pervasiveness of advanced technology within our economic and social infrastructures demands that engineers more fully recognize and take into account the potential economic and social consequences that may occur when significant and analytically well-defined technical issues are resolved. A responsibly educated engineer must not only be in confident command of current analytic and design techniques but also have a thorough understanding of social and economic influences and an abiding appreciation for cultural and humanistic traditions. Our program supports these needs by offering each engineering student the opportunity to acquire a broad yet individualized technical and liberal education.

The Academic Program

As stated in the introduction of this catalog, Swarthmore seeks to help its students realize their full intellectual and personal potential, combined with a deep sense of ethical and social concern.

Within this context, the Engineering Department seeks to graduate students with a broad, rigorous education, emphasizing strong analysis and synthesis skills. Our graduates will be well rounded and understand the broader impacts of engineering. They will have the skills to adapt to new technical challenges, communicate effectively, and collaborate well with others.

The Engineering Department and its students provide to the College community a unique perspective that integrates technical and nontechnical factors in the design of solutions to multifaceted problems.

Objectives

Graduates with the bachelor of science degree in engineering are prepared to:

- Be flexible and resourceful, learn and apply new knowledge, and adapt successfully to novel circumstances and challenges.
- Communicate and work effectively with people with a broad variety of backgrounds at both a technical and nontechnical level.
- Apply engineering principles and methodology to the design and analysis of systems and to the solution of a wide variety of problems.
- Consider scientific, technologic, ethical, societal, economic, political and/or environmental issues in a local or global context.

Course Major

Engineering majors must complete requirements from two categories: (1) 12 engineering credits and (2) 8 credits in math and science, normally 4 in math and 4 in science. No courses taken at Swarthmore are intended to satisfy these departmental requirements, except those taken fall semester in the first year, may be taken credit/no credit. The requirements are detailed below, with math and science discussed separately.

Math requirement

To fulfill the math requirement for the engineering major, students must receive from the Mathematics and Statistics Department either placement or credit for: Elementary Single Variable Calculus (MATH 015); Further Topics in Single Variable Calculus or Advanced Topics in Single Variable Calculus (MATH 025 [025S] or 026); Several-Variable Calculus (MATH 033, 034, or 035); and Differential Equations (MATH 043 or 044). It is recommended that all students take Linear

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Algebra (MATH 027 or 028), particularly those with placement or credit for one or more math courses. Students are normally required to complete 4 credits in mathematics. The exception to this requirement is a student with fewer than 4 credits who has received credit for Linear Algebra (MATH 027 or 028), Several-Variable Calculus (MATH 033, 034, or 035) and Differential Equations (MATH 043 or 044). Such a student may take a fifth science course in lieu of the fourth math credit.

Science requirement

To fulfill the science requirement for the engineering major, students must receive credit for four science courses, and each one must be a natural sciences and engineering practicum. These courses should complement the student's overall program of study and must include (a) 1 credit in biochemistry, biology, or chemistry; and (b) placement or credit for 1 year of calculus-based physics (PHYS 003/PHYS 004, PHYS 007/PHYS 008, or the equivalent). To count toward the engineering major, the unspecified science credit(s) can come from astronomy, biology, (bio) chemistry, or physics, and must be acceptable for credit toward a minimal major in the offering department. A student may include PHYS 005 or ASTR 005 as part of the science requirement only if that course is taken in the first year. ASTR 016 may be used to fulfill this requirement. It is recommended that students with an interest in computer engineering consider courses offered by the Computer Science Department.

Engineering requirement

Students majoring in engineering are required to take seven engineering core courses; Mechanics (ENGR 006), Electric Circuit Analysis (ENGR 011), Linear Physical Systems Analysis (ENGR 012), Experimentation for Engineering Design (ENGR 014), Fundamentals of Digital Systems (ENGR 015), Thermofluid Mechanics (ENGR 041) and Engineering Design (ENGR 090). Mechanics is usually taken in the spring of the first year. Electric Circuit Analysis is usually taken in the fall of the sophomore year. Linear Physical Systems Analysis and Experimentation for Engineering Design are usually taken in the spring of the sophomore year. Fundamentals of Digital Systems can be taken in the fall of the sophomore, junior or senior year. Thermofluid Mechanics can be taken in the fall of the junior or senior year. Engineering Design (ENGR 090) is the culminating experience for engineering majors and must be taken by all majors in spring of senior year. Submission and oral presentation of the final project report in Engineering Design constitutes the comprehensive examination for engineering majors.

Elective Program for course majors

Each student devises a program of advanced work in the department in consultation with his or her adviser. These programs normally include five electives. The choice of electives is submitted for departmental approval as part of the formal application for a major in engineering during the spring semester of the sophomore year.

A student's elective program may or may not conform to some traditional or conventional area of engineering specialization (e.g., computer, electrical, mechanical, or civil). The department therefore requires each plan of advanced work to have a coherent, well-justified program that meets the student's stated educational objectives.

At most one Swarthmore course taught by a faculty member outside the Engineering Department can count as one of the 12 engineering credits required for the major.

Normally a maximum of 2.5 transfer credits that are preapproved by the Engineering Department will be accepted as partial fulfillment of the 12 engineering credits required for the major. Exceptions to this rule include students who transfer to Swarthmore and others with special circumstances; the amount of credit accepted in their cases will be determined on a case-by-case basis by the department chair.

Students should be aware that most lecture courses at other institutions carry only 0.75 Swarthmore credits, unless they include a full lab sequence. Students who wish to receive credit for courses taken at other institutions, including those taken abroad, as partial fulfillment of the requirements for the major should consult their academic advisers and the chair of the Engineering Department as early as possible to ensure that all requirements are met.

The courses available for traditional elective programs include the following:

- *Electrical engineering group.* Electronic Circuit Applications, Physical Electronics, Electromagnetism, Communication Systems, Digital Signal Processing, VLSI Design, and Control Theory and Design. Students having an interest in digital systems might replace one or more of these courses with Principles of Computer Architecture and Computer Graphics.
- *Computer engineering group.* Principles of Computer Architecture, VLSI Design, Computer Graphics, Computer Vision, Introduction to Computer Networks, Mobile Robotics, Operating Systems, and Principles of Compiler Design and Construction. Students with an interest in computer hardware may include Electronic Circuit Applications, Physical Electronics, Digital Signal Processing, and Control Theory and Design.

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- *Mechanical engineering group.* Mechanics of Solids, Fluid Mechanics, Heat Transfer, Thermal Energy Conversion, Solar Energy Systems, or Control Theory and Design.
- *Civil and environmental engineering group.* Basic preparation includes Mechanics of Solids, Structural Analysis, Soil and Rock Mechanics, and Water Quality and Pollution Control. Additional courses include Operations Research and Environmental Systems for those interested in the environment or urban planning; or Structural Design for those interested in architecture and construction. Other recommended courses include Solar Energy Systems, and Fluid Mechanics.

Course Minor

Academic advising

Students interested in pursuing a minor must find a faculty member within the Engineering Department to advise them. If possible, this faculty member should have interests that overlap the area of the minor. Students who encounter difficulties in identifying an adviser should seek the assistance of the chair of the Engineering Department. Students who plan to minor in engineering should regularly consult their engineering advisers. The sophomore papers of engineering minors should indicate the plan to minor and the courses chosen to fulfill the minor.

Requirements

A minimum of 5 credits in engineering is required, of which at least 2 but not more than 3 must be core courses (ENGR 006, 011, 012, 014, 015, or 041, but not ENGR 090). The remainder will be selected from elective course offerings within the department. Only those electives that count toward an engineering major can be counted toward a minor.

At most one Swarthmore course taught by a faculty member outside the Engineering Department can count as one of the 5 engineering credits required for the minor.

Supporting work in mathematics, physics, chemistry, and computer science is necessary only when designated as a prerequisite to an individual engineering course.

No directed readings may be used as one of the 5 credits for the minor.

A maximum of 1 transfer credit that is preapproved by the Engineering Department will be accepted as partial fulfillment of the minor requirements. Transfer credits will not count for one of the two courses used to fulfill the core course requirement of the minor. Students should be aware that most lecture courses at other institutions carry only 0.75 Swarthmore credits, unless they include a full lab sequence. Students who wish to receive

credit for courses taken at other institutions, including those taken abroad, as partial fulfillment of the requirements for the minor should consult their academic advisers and the chair of the Engineering Department as early as possible to ensure that all requirements are met. No culminating experience will be required. Only students pursuing the major in engineering may enroll in ENGR 090.

Areas of study

Although packaged selections of courses will be suggested as options for those interested in an engineering minor, students may tailor their programs to meet individual needs and interests in consultation with their advisers.

Honors Major

Students with a B+ average among courses in the Division of Natural Sciences and Engineering may apply for an honors major in engineering. This B+ average must be maintained through the end of the junior year to remain in the Honors Program. A listing of preparations supported by existing engineering courses is appended. Credits from approved attachments or special topics courses may substitute for not more than 1 credit within any preparation.

Honors majors must complete the same requirements as course majors in engineering.

The honors major in engineering is a four-examination program that includes three preparations in engineering (the major) and one minor preparation. Each area comprises 2 credits of work. The preparations may include ENGR 090 and/or one other core course.

The minor preparation must comprise at least 2 credits of work approved by any department or program outside engineering.

Each major candidate must accumulate 12 credits in engineering, including ENGR 090, and the same number of science and math credits as required of course majors.

If one of the major preparations includes ENGR 090, it must be paired with an appropriately related upper-level engineering elective or a 1-credit honors thesis to be completed in the fall semester of senior year. Honors thesis credit may not substitute for any of the 12 engineering credits required for the bachelor of science. Candidates who choose an honors thesis will complete at least 13 credits in engineering and 33 across the College. The two additional major preparations must each comprise two related, upper-level engineering electives. A précis of not more than 12 pages (including tables and figures) of each candidate's ENGR 090 project must be submitted by the end of the 10th week of the spring semester for mailing to the relevant honors examiner. The final ENGR 090

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report will not be mailed to any examiner but may be brought to the oral examinations.

Senior honors study by engineering majors is not required.

Honors Minor

Senior honors study is required for all engineering honors minors, except those who are also engineering course majors. For those not majoring in engineering, the senior honors study is the culminating experience. Course majors will not take senior honors study because ENGR 090 serves as the culminating experience.

Every engineering honors minor preparation must include two related upper-level engineering electives for which all prerequisites must be satisfied. If the student is not also an engineering course major, then senior honors study is also required. Credits from official attachments or special topics courses in engineering may substitute for not more than one of the two upper-level courses within an engineering minor preparation.

Prerequisites to upper-level engineering electives may be waived by the department, depending on the student's documentation of equivalent work in another department at the time of application.

Prospective engineering majors and minors receive more specific information about Course and Honors Programs from the department each December. Additional information is also available on the Engineering Department website.

Application Process Notes for the Major or the Minor

A form to aid in planning a proposed program of study is available on the department website. This form must be completed and submitted as part of the Sophomore Plan. All engineering courses are to be listed on this form in the appropriate semesters. Check prerequisites carefully when completing the program planning form. Courses, prerequisites and their availability are listed in the College Catalog. Note that many courses are offered yearly, others in alternate years, and some only when demand and staffing permit. An updated prospective two-year schedule is also available on the website.

Courses Readily Available to Students Not Majoring or Minor in Engineering

Problems in Technology (003), Art and Engineering of Structures (007), and How Do Computers Work? (008) are designed for students contemplating only an introduction to

engineering. Mechanics (006) is primarily for prospective majors, but other interested students, particularly those preparing for careers in architecture or biomechanics, are encouraged to enroll. Environmental Protection (004A), Operations Research (057), Solar Energy Systems (035), Water Quality and Pollution Control (063), Swarthmore and the Biosphere (004B), Environmental Systems (066), and Environmental Policy and Politics (004C) appeal to many students majoring in other departments, particularly those pursuing an environmental studies minor. Students interested in computers, including computer science majors or minors, may wish to consider Fundamentals of Digital Systems (015), Principles of Computer Architecture (025), Computer Graphics (026), Computer Vision (027), and Mobile Robotics (028). Students majoring in the physical sciences or mathematics may enroll routinely in advanced engineering courses.

Note that Engineering Methodology, Problems in Technology, Environmental Protection, Swarthmore and the Biosphere, Art and Science of Structures and How Do Computers Work? are not admissible as technical electives within an engineering major or minor but may be taken as free electives subject to the 20-course rule.

Off-Campus Study

Poland Study Abroad Program

A program of study is available, normally in the spring of the junior year, at the Technical University of Krakow, Poland, for students interested in an engineering study abroad experience in a non-English-speaking country. Students take courses taught in English consisting of two engineering electives and a survey course Environmental Science and Policy in Central and Eastern Europe, plus an intensive orientation course on Polish language and culture provided by the Jagiellonian University. Coordinator: Professor McGarity.

Courses

ENGR 003. Problems in Technology

For students not majoring in science or engineering, this course will concentrate on the automobile and its impact on society. Class time will cover the principles of operation of vehicles and student lead discussions on related technical, political, social, and economic issues. Possible laboratory topics include evaluating alternative power systems (e.g., solar, hydrogen, and electric); investigating alternative fuels; and understanding existing automotive components. Enrollment is limited. Usually offered in alternate years.

Natural sciences and engineering practicum.

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Writing course.

1 credit.

Not offered 2012–2013.

004: Environmental Courses for Nonmajors

Courses numbered ENGR 004A–004Z serve all students interested in environmental science, technology, and policy. Indicated courses may be used to satisfy the writing course and natural sciences and engineering practicum requirements. Some may also meet requirements for minors in environmental studies or public policy and special majors in environmental science or environmental policy and technology. Similar courses are available through the College's off-campus study programs in Poland and Cape Town, South Africa. These courses may not be used to satisfy requirements for the major or minor in engineering.

ENGR 004A. Environmental Protection

This course covers fundamentals of analysis for environmental problems in the areas of water pollution, air pollution, solid and hazardous wastes, water and energy supply, and resource depletion, with an emphasis on technological solutions. Topics include scientific concepts necessary to understand local and global pollution problems, pollution control and renewable energy technologies, public policy developments related to regulation of pollutants, and methods of computer-based systems analysis for developing economically effective environmental protection policies. Eligible for ENVS credit.

1 credit.

Not offered 2012–2013.

ENGR 004B. Swarthmore and the Biosphere

An interdisciplinary seminar-style investigation of the role of Swarthmore College and its community within the biosphere, including an intensive field-based analysis of one major aspect of Swarthmore's interaction with its environment such as food procurement, waste disposal, or energy use. Student project groups explore the selected topic from various perspectives, and the class proposes and attempts to implement solutions. Faculty from various departments provide background lectures, lead discussions of approaches outlined in the literature, and coordinate project groups. This course is cross-listed in the instructors' departments and does not count toward distribution requirements.

1 credit.

Offered when demand and staffing permit.

ENGR 005. Engineering Methodology

A course for those interested in engineering, presenting techniques and tools that engineers use to define, analyze, solve, and report on technical problems, and an introduction to department facilities. Designed for students who are potential majors as well as those interested only in an introduction to engineering. Although ENGR 005 is not required of prospective engineering majors, it is strongly recommended. This course cannot be used to fulfill the requirements for the engineering major or minor.

0.5 credit.

Fall 2012. Cheever.

ENGR 006. Mechanics

This course covers fundamental areas of statics and dynamics. Elementary concepts of deformable bodies are explored, including stress-strain relations, flexure, torsion, and internal pressure. Laboratory work includes a MATLAB workshop, experiments on deformable bodies, and a truss-bridge team design competition.

Prerequisite: PHYS 003 or the equivalent.

1 credit.

Spring 2013. Everbach, Staff.

ENGR 007. Art and Engineering of Structures

This introduction to the basic principles of structural analysis and design includes an emphasis on the historical development of modern structural engineering. It is suitable for students planning to study architecture or architectural history, or who have an interest in structures. This course includes a laboratory and is designed for students not majoring in engineering. Usually offered in alternate years.

1 credit.

Not offered 2012–2013.

ENGR 008. How Do Computers Work?

This course combines technical basics of digital systems and computer organization with a less technical overview of a range of topics related to computers. Class time will include a combination of lectures, student presentations and discussions, and hands-on design. Some of the topics covered include clusters and networks such as the Internet, file sharing programs such as iTunes and YouTube, and the history and future of computers. For students not majoring in engineering, no prerequisites.

1 credit.

Spring 2013. Moreschet.

ENGR 009. Engineering and Scientific Applications of Calculus

This half-credit course will focus on mathematical applications of single variable

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calculus, mainly from engineering and physics; it may also include some examples from other sciences if there is student interest. In addition, ENGR 009 will include a review of relevant pre-calculus topics. It is designed to give capable and hard-working students the best chance to excel in calculus, and is recommended for students who are interested in real-world contexts where calculus is used, including (but not limited to) potential science and engineering majors.

The course will meet twice weekly for a total of 2.5 hours, and have little outside work associated with it. Most of the time in class will be spent solving problems and doing group work.

ENGR 009 may not be used to fulfill the requirements for the engineering major or minor, and is available only to students taking MATH 015 concurrently.

0.5 credit.

Not offered 2012–2013.

ENGR 011. Electrical Circuit Analysis

The analysis of electrical circuits is introduced, including resistors, capacitors, inductors, op-amps, and diodes. The student will learn to develop equations describing electrical networks. Techniques are taught to solve differential equations resulting from linear circuits. Solutions will be formulated both in the time domain and in the frequency domain. There is a brief introduction to digital circuits and a laboratory.

Prerequisites: MATH 025/026 or its equivalent, or permission of the instructor. PHYS 004 is recommended.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Molter, Piovoso.

ENGR 012. Linear Physical Systems Analysis

Engineering phenomena that may be represented by linear, lumped-parameter models are studied. This course builds on the mathematical techniques learned in ENGR 011 and applies them to a broad range of linear systems, including those in the mechanical, thermal, fluid, and electromechanical domains. Techniques used include Laplace Transforms, Fourier analysis, and Eigenvalue/Eigenvector methods. Both transfer function and state-space representations of systems are studied. The course includes a brief introduction to discrete time systems and includes a laboratory.

Prerequisite: ENGR 011 or the equivalent or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Cheever, Piovoso.

ENGR 014. Experimentation for Engineering Design

Students are introduced to measurement systems, instruments, probability, statistical analysis, measurement errors, and their use in experimental design, planning, execution, data reduction, and analysis. Techniques of hypothesis testing, confidence intervals, and single and multivariable linear and nonlinear regression are covered. This course includes a laboratory.

Prerequisite: Math 033 or equivalent or consent of instructor.

Natural sciences and engineering practicum.

Writing course.

1 credit.

Spring 2013. Macken, McGarity.

ENGR 015. Fundamentals of Digital Systems

The course will introduce students to digital system theory and design techniques, including Boolean algebra, binary arithmetic, digital representation of data, gates, and truth tables. Digital systems include both combinational and sequential logic—consisting of flip-flops, finite state machines, memory, and timing issues. Students will gain experience with several levels of digital systems, from simple logic circuits to a hardware description language and interface programming in C. This course includes a laboratory.

Prerequisites: At least 1 credit in engineering or computer science or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Moreshet.

ENGR 019. Numerical Methods for Engineering Applications

(Cross-listed as MATH 024)

This course is geared towards students who want to know how to transform a set of equations on a page into a working computer program. Topics will include root finding, discrete and continuous optimization, gradient descent, solution of linear systems, finite element methods, and basic methods in computational geometry. We will also discuss how real numbers are represented by computers, especially insofar as they affect precision and accuracy of calculations. Techniques will be applied in a series of projects focused on engineering applications.

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Prerequisites: MATH 025/026 or its equivalent, or permission of the instructor.

1 credit.

Fall 2012. Zucker.

ENGR 020. Introduction to Computer Networks

This course introduces the principles and practice of computer networking. Topics include the structure and components of computer networks, packet switching, layered architectures, physical layer, window flow control, network layer, local area networks (Ethernet, Token Ring, FDDI), TCP/IP, error control, congestion control, quality of service, multicast, network security, wireless LANs and cellular wireless networks.

Prerequisite: ENGR 015 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 022. Operating Systems

(See CPSC 045)

Prerequisite: CPSC 035 required. One of ENGR 025 or CPSC 033 is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 023. Principles of Compiler Design and Construction

(See CPSC 075)

Prerequisite: CPSC 035 required. One of ENGR 025 or CPSC 033 is recommended.

Lab work required.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Newhall.

ENGR 024. VLSI Design

This course is an introduction to the design, analysis, and modeling of digital integrated circuits, with an emphasis on hands-on chip design using CAD tools. The course will focus on CMOS technology and will cover both full custom and synthesis VLSI design. A laboratory is included.

Prerequisite: ENGR 015 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 025. Principles of Computer Architecture

(Cross-listed as CPSC 052)

This course covers the physical and logical design of a computer. Topics include current microprocessors, CPU design, RISC and CISC, pipelining, superscalar processing, caching, virtual memory, assembly and machine language, and multiprocessors. Labs cover performance analysis via simulation and microprocessor design using CAD tools.

Prerequisites: One of ENGR 015, CPSC 035, CPSC 033.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Moreshet.

ENGR 026. Computer Graphics

(See CPSC 040)

Prerequisites: CPSC 035 and Linear Algebra required or permission of the instructor. (Linear Algebra may be taken concurrently.)

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Danner.

ENGR 027. Computer Vision

(Cross-listed as CPSC 072)

Computer vision studies how computers can analyze and perceive the world using input from imaging devices. Topics include line and region extraction, stereo vision, motion analysis, color and reflection models, and object representation and recognition. The course will focus on object recognition and detection, introducing the tools of computer vision in support of building an automatic object recognition and classification system. Labs will involve implementing both off-line and real-time object recognition and classification systems.

Prerequisites: ENGR 015 or CPSC 035. MATH 027 or 28(S) is strongly recommended.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Zucker.

ENGR 028. Mobile Robotics

(Cross-listed as CPSC 082)

This course addresses the problems of controlling and motivating robots to act intelligently in dynamic, unpredictable environments. Major topics will include mechanical design, robot perception, kinematics and inverse kinematics, navigation and control, optimization and learning, and robot simulation techniques. To demonstrate these concepts, we will be looking at mobile robots, robot arms and

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positioning devices, and virtual agents. Labs will focus on programming robots to execute tasks and to explore and interact with their environment.

Prerequisites: ENGR 015 or CPSC 035. MATH 027 or 028(S) is strongly recommended.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Zucker.

ENGR 035. Solar Energy Systems

Fundamental physical concepts and system design techniques of solar energy systems are covered. Topics include solar geometry, components of solar radiation, analysis of thermal and photovoltaic solar collectors, energy storage, computer simulation of system performance, computer-aided design optimization, and economic feasibility assessment. This course includes a laboratory. Offered in the fall semester of alternate years.

Prerequisites: PHYS 004, MATH 015, or the equivalent or the permission of the instructor. Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 041. Thermofluid Mechanics

This course introduces macroscopic thermodynamics: first and second laws, properties of pure substances, and applications using system and control volume formulation. Also introduced is fluid mechanics: development of conservation theorems, hydrostatics, and the dynamics of one-dimensional fluid motion with and without friction. A laboratory is included.

Prerequisites: ENGR 006, 011 and 012 or the equivalent.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Macken, Moser.

ENGR 057. Operations Research

(Cross-listed as ECON 032)

This course introduces students to mathematical modeling and optimization to solve complex, multivariable problems such as those relating to efficient business and government operations, environmental pollution control, urban planning, and water, energy, and food resources. Introduction to the AMPL computer modeling language is included. A case study project is required for students taking the course as a Natural sciences and engineering practicum (ENGR 057). The project is optional for students taking the course as ECON 032.

Prerequisite: familiarity with matrix methods, especially solution of simultaneous linear

equations, i.e., elementary linear algebra; but a full course in linear algebra is not required.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. McGarity.

ENGR 058. Control Theory and Design

This introduction to the control of engineering systems includes analysis and design of linear control systems using root locus, frequency response, and state space techniques. It also provides an introduction to digital control techniques, including analysis of A/D and D/A converters, digital controllers, and numerical control algorithms. A laboratory is included.

Prerequisite: ENGR 012 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Cheever.

ENGR 059. Mechanics of Solids

Internal stresses and changes of form that occur when forces act on solid bodies or when internal temperature varies are covered as well as state of stress and strain, strength theories, stability, deflections, photoelasticity, and elastic and plastic theories. A laboratory is included.

Prerequisite: ENGR 006 or the equivalent.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Siddiqui.

ENGR 060. Structural Analysis

This course covers fundamental principles of structural mechanics including statically determinate analysis of frames and trusses, approximate analysis of indeterminate structures, virtual work principles, and elements of matrix methods of analysis and digital computer applications. A laboratory is included. Offered in the fall semester of alternate years.

ENGR 006, or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 061. Geotechnical Engineering: Theory and Design

Soil and rock mechanics are explored, including soil and rock formation, soil mineralogy, soil types, compaction, soil hydraulics, consolidation, stresses in soil masses, slope stability, and bearing capacity as well as their application to engineering design problems. A laboratory is included. Offered in the fall semester of alternate years.

Grade of B or better in ENGR 006, or permission of the instructor.

Natural sciences and engineering practicum.

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1 credit.

Fall 2012. Siddiqui.

ENGR 062. Structural Design

This course covers the behavior and design of steel and concrete structural members. Topics will include a discussion of the applicable design codes and their applications to structural design. A laboratory is included. Normally offered in the spring semester of alternate years.

ENGR 006, or permission of the instructor

Natural sciences and engineering practicum

1 credit.

Not offered 2012–2013.

ENGR 063. Water Quality and Pollution Control

Students will study elements of water quality management and treatment of wastewaters through laboratory and field measurements of water quality indicators, analysis of wastewater treatment processes, sewage treatment plant design, computer modeling of the effects of waste discharge, stormwater, and nonpoint pollution on natural waters, and environmental impact assessment. Offered in the fall semester of alternate years.

Prerequisites: CHEM 010, MATH 025 or 026, or the equivalent or consent of the instructor.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. McGarity.

ENGR 066. Environmental Systems

Students will explore mathematical modeling and systems analysis of problems in the fields of water resources, water quality, air pollution, urban planning, and public health. Techniques of optimization including linear and integer programming are used as frameworks for modeling such problems. Dynamic systems simulation methods and a laboratory are included. Offered in the spring semester of alternate years.

Recommended: ENGR 057 or the equivalent, or the consent of instructor.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. McGarity.

ENGR 071. Digital Signal Processing

Students will be introduced to difference equations and discrete-time transform theory, the Z-transform and Fourier representation of sequences, and fast Fourier transform algorithms. Discrete-time transfer functions and filter design techniques are also introduced. This course introduces the architecture and programming of digital signal processors. A laboratory is included.

Prerequisite: ENGR 012 and ENGR 015 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 072. Electronic Circuit Applications

The student will learn the fundamentals of practical electronic circuit design and construction for purposes of instrumentation and control. This includes diode applications, op-amps for amplification and filtering of electronic signals, and power MOSFET transistors as switching devices for actuators such as motors. Mixed signal devices (A/D and D/A converters) are introduced and used throughout the course. Students learn to program microcontrollers, including on-chip peripherals and the processing of interrupts. Throughout the course, practical considerations of circuit design and construction are covered. This course includes a laboratory.

ENGR 012 is a prerequisite and ENGR 015 is a corequisite; either or both may be waived at the discretion of the instructor.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Cheever.

ENGR 073. Physical Electronics

Topics include the physical properties of semiconductor materials and semiconductor devices; the physics of electron/hole dynamics; band and transport theory; and electrical, mechanical, and optical properties of semiconductor crystals. Devices examined include diodes, transistors, FETs, LEDs, lasers, and pin photo-detectors. Modeling and fabrication processes are covered. A laboratory is included. Offered in the spring semester of alternate years.

Prerequisite: ENGR 011 or PHYS 008 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 074. Semiconductor Devices and Circuits

This course explores the operation and application of semiconductor devices, including diodes, transistors (bipolar and field effect) and other devices. This includes terminal characteristics of semiconductor devices and circuits, including small signal models of single and multi-transistor amplifiers, and transistor-level modeling of operational amplifiers. The course also examines the speed and input-output characteristics of logic devices, the

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design of power circuits and problems of stability and oscillation in electronic circuits.

Prerequisite: ENGR 011 or permission of the instructor.

1 credit.

Not offered 2012–2013.

ENGR 075, 076. Electromagnetic Theory I and II

The static and dynamic treatment of engineering applications of Maxwell's equations will be explored. Topics include macroscopic field treatment of interactions with dielectric, conducting, and magnetic materials; analysis of forces and energy storage as the basis of circuit theory; electromagnetic waves in free space and guidance within media; plane waves and modal propagation; and polarization, reflection, refraction, diffraction, and interference. Offered in the fall semester of alternate years.

ENGR 076 will include advanced topics in optics and microwaves, such as laser operation, resonators, Gaussian beams, interferometry, anisotropy, nonlinear optics, modulation and detection. Laboratories for both courses will be oriented toward optical applications using lasers, fiber and integrated optical devices, modulators, nonlinear materials, and solid-state detectors.

ENGR 075.

Prerequisite: ENGR 012, PHYS 008, or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Molter.

ENGR 076.

Prerequisite: ENGR 075 or a physics equivalent.

Natural sciences and engineering practicum.

1 credit.

Offered when demand and staffing permit.

ENGR 078. Communication Systems

Theory and design principles of analog and digital communication systems are explored. Topics include frequency domain analysis of signals; signal transmission and filtering; random signals and noise; AM, PM, and FM signals; sampling and pulse modulation; digital signal transmission; PCM; coding; and information theory. Applications to practical systems such as television and data communications are covered. A laboratory is included. Offered in the spring semester of alternate years.

Prerequisite: ENGR 012 or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Molter.

ENGR 081. Thermal Energy Conversion

This course covers the development and application of the principles of thermal energy analysis to energy conversion systems, including cycles and solar energy systems. The concepts of availability, ideal and real mixtures, and chemical and nuclear reactions are explored. A laboratory is included. Offered in the spring semester of alternate years.

Prerequisite: ENGR 041.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

ENGR 083. Fluid Mechanics

Fluid mechanics is treated as a special case of continuum mechanics in the analysis of fluid flow systems. Conservation of mass, momentum, and energy are covered along with applications to the study of inviscid and viscous, incompressible, and compressible fluids. A laboratory is included. Offered in the spring semester of alternate years.

Prerequisite: ENGR 041.

Natural sciences and engineering practicum.

1 credit.

Spring 2013. Macken.

ENGR 084. Heat Transfer

Students are introduced to the physical phenomena involved in heat transfer. Analytical techniques are presented together with empirical results to develop tools for solving problems in heat transfer by conduction, forced and free convection, and radiation. Numerical techniques are discussed for the solution of conduction problems. A laboratory is included. Offered in the fall semester of alternate years.

Prerequisite: ENGR 041.

Natural sciences and engineering practicum.

1 credit.

Fall 2012. Macken.

ENGR 086. Dynamics of Mechanical Systems

Rigid-body kinematics and kinematics in plane and three-dimension using energy and momentum methods of analysis; linkages; vibrations; transform and state-variable dynamics modeling with Matlab. A laboratory is included.

Prerequisites: ENGR 006, ENGR 011, ENGR 012, MATH 033/034/035, MATH 043/044, or permission of the instructor.

Natural sciences and engineering practicum.

1 credit.

Not offered 2012–2013.

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ENGR 090. Engineering Design

Students work on a design project that is the culminating exercise for all senior engineering majors. Students investigate a problem of their choice in an area of interest to them under the guidance of a faculty member. A comprehensive written report and an oral presentation are required. This class is available only to engineering majors.

Writing course.

1 credit.

Spring 2013. Staff.

ENGR 091. Special Topics: Humanoid Robotics

In recent years, humanoid robots such as the Honda Asimo and Boston Dynamics' PetMan have become more prevalent as demand grows for robots that can navigate and work in the same spaces as humans. This project-based course focuses on several topics in the area of humanoid robotics including balancing, legged locomotion, and mobile manipulation. Students will work with detailed computer simulations of the Hubo biped, as well as with one of two Darwin-OP robots in the robotics lab. Successful student projects may be run on a real, human-sized Hubo located at Drexel University.

Prerequisites: Either MATH 027 or 028; one of ENGR 027 or ENGR 028 or CSPC 081; or permission from the instructor.

Lab work required; labs will be self-scheduled.
1 credit.

Spring 2013. Zucker.

ENGR 093. Directed Reading or Project

Qualified students may do special work with theoretical, experimental, or design emphasis in an area not covered by regular courses with the permission of the department and a willing faculty supervisor.

1 credit.

Offered only with departmental approval and faculty supervision.

ENGR 096. Honors Thesis

In addition to ENGR 090, an honors major may undertake an honors thesis in the fall semester of the senior year with approval of the department and a faculty adviser. A prospectus of the thesis problem must be submitted and approved not later than the end of junior year.

1 credit.

Offered only with departmental approval and faculty supervision.

ENGR 199. Senior Honors Study

Senior honors study is available only for engineering minors and must include at least 0.5 credit as an attachment to one of the courses

in the engineering preparation. This course may be taken only in the spring of the senior year.

0.5 or 1 credit.

Offered only with departmental approval and faculty supervision.

Preparation for Honors Examinations

The department will arrange honors examinations in the following areas to be prepared for by the combinations of courses indicated. Other preparations are possible by mutual agreement.

Communications and Electromagnetic Fields

Communication Systems

Electromagnetic Theory

Communications and Signal Processing

Communication Systems

Digital Signal Processing

Computer Architecture

Fundamentals of Digital Systems

Principles of Computer Architecture

Electromagnetic Theory

Electromagnetic Theory I

Electromagnetic Theory II

Electronics

Electronic Circuit Applications

Physical Electronics

Environmental Systems

Operations Research

Environmental Systems

Heat Transfer and Fluid Mechanics

Heat Transfer

Fluid Mechanics

Integrated Electronics

Electronic Circuit Applications

VLSI Design

Materials Engineering

Mechanics of Solids

Engineering Materials

Mobile Robotics and Machine Vision

Computer Vision

Mobile Robotics

Signals and Systems

Control Theory and Design

Digital Signal Processing

Solar Thermal Systems

Solar Energy Systems

Thermal Energy Conversion or Heat Transfer

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Structural Analysis and Design

Structural Analysis

Structural Design

Structural Mechanics

Mechanics of Solids

Structural Analysis

Structures and Soil

Structural Analysis

Geotechnical Engineering: Theory and Design

Thermal Energy Conversion and Heat Transfer

Thermal Energy Conversion

Heat Transfer

Visual Information Systems

Computer Graphics

Computer Vision

Water Quality and Fluid Mechanics

Water Quality and Pollution Control

Fluid Mechanics

Water Quality and Supply Systems

Water Quality and Pollution Control

Environmental Systems

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NATHALIE ANDERSON, Professor
 ELIZABETH BOLTON, Professor
 NORA JOHNSON, Professor and Chair
 PETER J. SCHMIDT, Professor
 PHILIP M. WEINSTEIN, Professor ⁶
 PATRICIA WHITE, Professor of Film and Media Studies
 CRAIG WILLIAMSON, Professor ³
 ANTHONY FOY, Associate Professor ³
 JILL GLADSTEIN, Associate Professor and Director of Writing Associates Program ²
 BAKIRATHI MANI, Associate Professor
 RACHEL BUURMA, Assistant Professor
 ERIC SONG, Assistant Professor ³
 WOON PING CHIN, Visiting Professor (part time) ⁵
 MELINDA FINBERG, Visiting Associate Professor (part time)
 GABRIEL CUTRUFELLO, Visiting Assistant Professor
 KEAT MURRAY, Visiting Assistant Professor (part time)
 LAYNIE BROWNE, Visiting Instructor (part time) ⁶
 GREGORY FROST, Visiting Instructor (part time)
 DALE MEZZACAPPA, Visiting Instructor (part time) ⁵
 RACHEL PASTAN, Visiting Instructor (part time) ⁶
 CAROLYN ANDERSON, Administrative Coordinator

² Absent on leave, spring 2013.

³ Absent on leave, 2012–2013.

⁵ Fall 2012.

⁶ Spring 2013.

This department offers courses in English literature, American literature, Native American literature, anglophone literature, Asian and asian american literatures, gay and lesbian literatures, drama, film, creative writing, critical theory, and journalism. The departmental curriculum includes the intensive study of works of major writers, major periods of literary history, and the development of literary types; it also provides experience in several critical approaches to literature and dramatic art and explores certain theoretical considerations implicit in literary study, such as the problematics of canon formation and the impact of gender on the creation and reception of literary works.

Students who plan to do graduate work, to follow a course of professional training, or to seek teacher certification in English should see a member of the department for early help in planning their programs, as should students who plan to include work in English literature in a special or cross-disciplinary major, or in a program with a concentration.

Requirements and Recommendations

First-Year seminars and Core Courses

The English Literature Department offers two kinds of first-year seminars. There are first-year seminars in composition and first-year seminars in literature. ENGL 001F is a first-year seminar in composition (academic writing.) These count

as Humanities W courses but do not count towards a major or minor in English literature. All first-year seminars (both in composition and in literature) are limited to 12 students. First-year seminars in English literature are numbered ENGL 008A-Z and ENGL 009A-Z. These literature seminars are designed to emphasize in-depth study of literary texts from a variety of perspectives, with careful attention to writing and maximum opportunity for class discussion. All first-year seminars in English count as humanities W courses. Students may take only one first-year seminar in literature from the English Department, but they are welcome to take a first-year seminar in composition and a first-year seminar in English literature.

We also offer core courses (CC), which are especially recommended for first- and second-year students, though they are open to all. CCs pay special attention to one or more of the following: close reading, historical context, secondary (i.e., theoretical or critical) readings, or genre. They are distinguished by their pedagogical emphasis rather than by course topic per se. Students are welcome to take more than one CC.

Students considering a major in English are strongly urged to take a first-year seminar in literature and one or two additional English courses during the sophomore year. Students need at least two literature courses from English to apply for the major. A core course or another mid-level English literature course is especially

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recommended. ENGL 070A–070K courses will not suffice as the second course when applying for a major. ENGL 005 Journalism Workshop does not count toward a major or minor in English literature. Majors and prospective majors should consult a member of the English Department for information about courses in other departments complementary to their work in English; work in foreign languages is especially recommended.

Course Major

The work of a major in course consists of a minimum of nine units of credit in the department including

- ENGL 099 (taken fall of the senior year, no exceptions),
- at least three units in literature written before 1830 (such courses are marked with a *),
- and at least three in literature written after 1830.

Courses marked with a *** may be counted as pre-1830 or post-1830 but not both. First-Year Seminars (ENGL 008 and 009A through Z), creative writing, journalism classes and AP credits do not count as part of the pre- or post-1830 requirement. Creative writing credits and/or a validated AP credit of 4 or 5 in Literature (not “Language”) count towards the credits needed for a major in English Literature; however, ENGL 005 (Journalism) does not.

Course Minor

The work of a minor in course consists of a minimum of five units of literature credit in the department including

- at least one unit in literature written before 1830 (such courses are marked with a *),
- and at least one in literature written after 1830.

Courses marked with a *** may be counted as pre-1830 or post-1830 but not both. First-Year Seminars in literature (ENGL 008 and 009 A through Z), creative writing, journalism classes, and an AP credit in Literature do not count as part of the pre- or post-1830 requirement. Creative writing credits and/or a validated AP credit of 4 or 5 in Literature (not “Language”) count towards the credits needed for a minor in English Literature; however, ENGL 005 (Journalism) does not.

Honors Major

Majors in English who seek a degree with honors will, in the spring of their sophomore year, propose for external examination a program consisting of four fields: three in English and one in a minor.

The three preparations in the major (constituting six units of credit) will be constituted as follows:

- all three preparations will normally be done through seminars (if approved by the department, one preparation may be a thesis or creative writing portfolio);
- the program must include at least one Group I and one Group II seminar.

Honors majors, as part of their overall work in the department, must meet the general major requirement of 9 credits in English literature, including three units of credit in literature written before 1830 and three units of credit in literature written after 1830. First-year seminars, creative writing, and journalism classes do not count as pre- or post-1830 classes. The Honors Program requirements are described in detail in the handout, Department of English Literature—Part II: Honors Program. Students interested in pursuing honors within a faculty-approved interdisciplinary major, program, or concentration that draws on advanced English courses or seminars should see the chair for early help in planning their programs.

Honors Minor

Minors must do a single, two-credit preparation in the department, normally by means of a seminar (or under special circumstances, a creative writing portfolio); the thesis option is only available to majors.

Minors are required to do a total of at least five units of work in English (including their honors preparation), with at least one pre- and one post-1830 credit. First-year seminars, creative writing, and journalism classes do not count as pre- or post-1830 classes. For further details, see the handout, Department of English Literature—Part II: Honors Program.

Double Majors

Students may, with the department’s permission, pursue a double major either as part of the Course or Honors Program. Double majors must fulfill all the major requirements in both departments.

For a double major in honors, one of the majors is used as the honors major and the other is often used as the honors minor. See the department chair for further details.

Special Major

Designed by the student in consultation with faculty advisers. If English is the central department, students must fulfill most of the regular requirements and have a minimum of 5 English Department credits as part of the special major. At least one of the 5 credits must

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be a pre-1830 course and one a post-1830 course.

Students must consult with the various departments or programs involved in the special major and have all approve the plan of study. Only one integrative comprehensive exercise is required.

Students may also do a special honors major with four related preparations in different departments.

Major with a Creative Writing Emphasis

Students who want to major in English literature with an emphasis in creative writing—whether course or honors majors—must complete three units of creative writing in addition to the usual departmental requirements of pre- and post-1830 units. The creative writing credits will normally consist of either

- three workshops (ENGL 070A, B, C, D, E, G, H, or J)

OR

- two workshops (ENGL 070A, B, C, D, E, G, H, or J) and ENGL 070K, Directed Creative Writing Projects

Students may count towards the program no more than one workshop offered by departments other than English literature. Admission into the program will depend upon the quality of the student's written work and the availability of faculty to supervise the work. Students who are interested in the program are urged to talk both with the department chair and with one of the department faculty who regularly teach the workshops.

Note: Creative writing and journalism classes do not count as pre- or post-1830 classes. ENGL 070A, 070B, 070C, 070H, and 070K are CR/NC courses (not graded).

For a more detailed description of the English Literature Creative Writing program and its history, see the English Department website or handouts available at LPAC 202.

Thesis / Culminating Exercise

Course Majors

This colloquium, open only to senior English literature course majors and required for them to take, offers a structured and supportive environment for students writing their senior essays. The course will feature a mix of literature, criticism, theory, and methodology, plus guest visits by other members of the English Literature Department and possibly others, with the opportunity for students to discuss central issues in the field of literary and cultural history in preparation for their research and writing.

Honors Majors

Honors majors will prepare a senior honors essay and take an Honors exam for each of their three English honors preparations.

Students who wish either to write a thesis or pursue a creative writing project under faculty supervision as part of the Honors Program must submit proposals to the department; the number of these ventures the department can sponsor each year is limited. Students who propose creative writing projects will normally be expected to have completed at least one writing workshop as part of, or as a prelude to, the project; the field presented for examination will thus normally consist of a 1-credit workshop plus a 1-credit directed creative writing project. For further information, including deadlines for directed creative writing proposals, see rubric under ENGL 070K.

Application Process Notes for the Major or the Minor

Applications for the major in English literature are considered in the spring of the sophomore year. Each student will, under the guidance of a faculty adviser, present a reasoned plan of study for the last two years. This plan will be submitted to the department and will be the basis of the departmental discussion of the student's application for a major. The plan will include a list of proposed courses and seminars that will satisfy the requirements for either the Course or Honors Program and a rationale for the program of study.

Such applications are normally considered at a meeting of all department members. Each student is discussed individually. The department has never established a minimum grade point average, nor are certain courses weighted in this discussion more heavily than others. A record of less than satisfactory work in English would certainly give us pause, however, unless it were attributable to circumstances other than academic ability. Students who want to include the English major as part of a double major must have a record of strong work in both majors as well as in other courses.

Students are eligible for seminars in the department regardless of their choice of honors or course majors. Admission to seminars will be based on a student's prior academic work, her/his ability to interact well in a small class situation, and the shape of the larger course of study articulated in the Sophomore Plan. For oversubscribed seminars, priority will normally be given to honors majors and minors.

The minimum requirement for consideration for the major, minor, or admission to any seminar is the completion of at least two courses in English, not counting creating writing

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workshops. Applications for the major will be deferred until two literature courses are completed.

Advanced Placement/International Baccalaureate Credit

A maximum of 2 credits may be awarded for AP or IB work.

AP Credit

Students will receive credit for AP scores of 4 or 5 in English Lit/Comp which will count both toward graduation and toward the major requirements. AP credit is given for scores of 4 or 5 in English Lang/Comp but count only toward graduation and not toward the major requirements. If students take both exams and receive scores of 4 or 5 they will receive one credit for each exam.

IB Credit

AP Literature credit is given for a score of 6 or 7 on the Higher Level English examination in the International Baccalaureate program. This credit will count both toward graduation and toward the major requirements.

Transfer Credit

Students wishing to study away from Swarthmore should consult with the department chair far enough in advance of such study to effect proper planning of a major or minor. In determining which courses of study will meet department criteria for requirements or credit toward a major or minor, the department will rely both on its experience in evaluating the work of students returning from these programs and on careful examination of course descriptions, syllabi, and schedules. Students may undertake preparations for papers in the Honors Program while studying away from Swarthmore, but should consult carefully in advance with the appropriate department faculty.

Course credits for literature in English should be approved before you leave, but no course credits are finally awarded until you consult with the department upon your return to Swarthmore.

To find out who the course credits consultant is for English, contact the department chair.

Please see the English Department website (www.swarthmore.edu/englishliterature) for more information on transferring credits.

Off-Campus Study

Students wishing to study abroad should consult with the departmental chair far enough in advance of such study to effect proper planning of a major or minor.

In determining which courses of study abroad will meet department criteria for requirements or to receive credit toward a major or minor, the department will rely both on its experience in evaluating the work of students returning from these programs and on careful examination of course descriptions, syllabi, and schedules.

Students may sometimes undertake preparations for papers in the Honors Program while studying abroad, but should consult carefully in advance with the appropriate department faculty. For further details concerning department policies for study abroad, consult the department statement filed with the Off-Campus Study Office. For further information on transferring credits toward the major or minor, see the relevant link on the English Department website.

Teacher Certification

English majors may complete the requirements for English certification through a program approved by the State of Pennsylvania. For further information about the relevant set of English and Educational Studies requirements, please refer to the Educational Studies section of the Bulletin.

Life After Swarthmore

Students graduating with a major in English literature often go on to pursue graduate or professional studies or take up a wide variety of positions in the working world where strong reading, writing, and interpretive skills are at a premium—in the public or private sector, in government or in non-government organizations. Many study law, medicine, or journalism. We number among our graduates poets and novelists, social workers and scholars, news writers, broadcast journalists and editors, grant-writers, doctors, and directors.

Curriculum

The English Department courses are grouped together by historical period, genre, or course level as follows:

- 001–005 A, B, C, etc.: Academic writing courses and seminars that do not count toward the major
- 008 and 009 A, B, C, etc.: First-Year Seminars (counted as W courses)
- 010–096: Advanced courses including core courses
- 010, 011: Survey Courses in British Literature
- 014–019: Medieval
- 020–029: Renaissance and 17th Century
- 030–039: Restoration, 18th Century, and Romantic
- 040–049: Victorian to Modern

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050–069: American (including African American, Asian American, and Native American)
 070 A, B, C, etc.: Creative Writing Workshops
 071A, B, C, etc.: Genre Studies
 072–079: Comparative Literature/Literature in Translation
 080–096: Critical Theory, Film, and Media Studies
 097–099: Independent Study and Culminating Exercises
 Over 100: Honors Seminars, Theses, etc. (open to juniors and seniors with approval of the department chair only)

001–005: Academic Writing Courses

These courses are writing-intensive courses that count toward graduation credit but not toward the English major. They may not be substituted for a prerequisite course in English.

ENGL 001C. Writing Pedagogy

(Cross-listed as EDUC 001C)

This seminar serves as the gateway into the Writing Associates Fellowship Program. Students are introduced to the theory and pedagogy of composition studies and the concept of reflective practice. The seminar asks students to connect theory with practical experience when assessing how best to engage with different student writers and different forms of academic prose. Students will interact with the complexity of their new positions as peer mentors while learning how to be a professional within this role. Topics covered include: the ethics of peer mentoring, active listening, development of written arguments, learning styles, and conferencing. This course is open only to those selected as WAs. It is a credit/no credit course.

Meets distribution requirements but does not count toward the major.

Writing course.

1 credit.

Fall 2012. Gladstein.

ENGL 001D. Writing Tutorial

Students enrolled in ENGL 001F or 001G, in consultation with the professor of these courses, may enroll in the tutorial. Students will set up an individual program to work with the professor and/or a Writing Associate on writing for the course or other courses. Students take the tutorial in conjunction with ENGL 001F or ENGL 001G, or they may take it in a subsequent semester.

0.5 credit.

Fall 2012. Cutrufello.

ENGL 001F. First-Year Seminar: Transitions to College Writing

This class, limited to 12, introduces students to the different genres of writing required at the College. Through assignments and class readings students learn what they might need to transition from writing in high school to writing at Swarthmore.

Meets distribution requirements but does not count toward the major. Students may take ENGL 001F and an English Literature first-year seminar (ENGL 008 A-Z and 009A-Z).

Writing course.

1 credit.

Fall 2012. Cutrufello.

ENGL 001G. Writing with Genres

Writing with Genres looks behind the scenes of typical genres assigned at Swarthmore College to help students uncover how a disciplinary community's assumptions and practices shape what is and what isn't acceptable for writers. To explore these writing expectations, this class is built around one sustained question that will guide reading and writing throughout the semester: how have advanced members of disciplinary communities—professors, professionals, seniors—come to know what they know about writing? To answer this question, this course aims to teach students how an understanding of genre (as an organizing principle of disciplinary ways of inventing, writing, and thinking) can not only improve academic writing, but can also make evident the tacit knowledge and skills required by a range of academic genres.

This course is open to all students and offers an opportunity to develop skills as college writers. Through frequent practice, class discussion, and in-class activities, students will become familiar with all aspects of the writing process and will develop their ability to write academically.

Students will also participate in conferences with the instructor and course Writing Associates. Meets distribution requirements but does not count toward the major.

Writing course.

1 credit.

Spring 2013. Cutrufello.

ENGL 001H. Insights into Argument and Research Writing Across the Disciplines

This course will appeal to any student interested in learning how to use the research process to write engaging, relevant papers. The course will ask each student to use rhetorical and writing studies as a foundation for a critical investigation of writing in their discipline and address the questions: "How does an academic discipline communicate its work to different audiences?" and "What does this tell us about

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the nature of specific academic communication practices and cultures?" By exploring these questions, students will be introduced to paper writing through the process of crafting academic arguments from research-oriented questions derived from their own academic interests. Through in-class discussions, short writing assignments, and independent research, students will hone their writing skills and produce a variety of common texts found in academic writing communities—annotated bibliographies, literature reviews, abstracts, formal research papers, conference papers, and visual presentations. Students will conference with the instructor and course Writing Associates to discuss their drafts and revision strategies.

Writing course.

1 credit.

Fall 2013. Cutrufello.

ENGL 002A. Argument and Rhetoric Across the Disciplines

This course examines the questions of rhetorical analysis in different academic genres. Through the reading of academic journal articles, popular press pieces, and texts on rhetoric and argument, students will both deconstruct and construct academic arguments as they are presented in different disciplines. The course will explore such topics as ethos, pathos, and logos; intended audience and how to use evidence to persuade that audience; what constitutes evidence and how evidence is utilized; the use of numbers to support or respond to an argument.

Meets distribution requirements but does not count toward the major.

Writing course.

1 credit.

Not offered 2012–2013. Gladstein.

ENGL 003A. Independent Study and Directed Reading in Writing Studies

Students who plan an independent study or a directed reading must consult with the appropriate instructor and submit a prospectus for such work before the beginning of the semester during which the study is actually done. The course is available only if a professor is free to supervise the project.

0.5 or 1 credit.

Staff.

ENGL 005. Journalism Workshop

An introduction to the basics of news gathering, news writing, and journalism ethics. Students learn the values, skills, and standards crucial to high-quality journalism, regardless of platform. They write conventional news stories as well as narratives, profiles, non-deadline features, trend

stories, and point-of-view articles on a beat of their choosing. Guest speakers include award-winning reporters and editors. This course counts as a general humanities credit and as a writing course, but does not count as a credit toward a major or minor in English literature. Application to this course does not require the submission of a manuscript.

Writing course.

1 credit.

Fall 2012. Mezzacappa.

008 and 009: First-Year Seminars In English Literature

These courses are limited to 12 first-year students only. No student may take more than one. All count as Writing courses.

ENGL 009B. First-Year Seminar: Old Worlds, New Worlds

This course investigates the long written history of European travel to (and conquests of) "new" worlds, Eastern and Western. Texts include the fantastical but influential *Travels of Sir John Mandeville*, More's fictional *Utopia*, Columbus's accounts of his explorations, Shakespeare's *The Tempest*, and Milton's *Paradise Lost*. Geopolitical and literary histories intersect: forms of writing govern the imagination of exploration, and vice versa. The course concludes with Robinson Crusoe and Equiano's abolitionist autobiography.

Writing course.

1 credit.

Fall 2013. Song.

ENGL 009C. First-Year Seminar: Imagining Natural History

For over 200 years, writers have observed, described and puzzled over Nature writ large and small. How does the human imagination continually rediscover itself in natural history? In this course, students will read and analyze classic texts in the nature writing tradition while working to develop the skills of a naturalist themselves as they keep a field journal set in the College's Crum woods. Readings range from British and American Romantics (the Wordsworths, Clare, Keats, Emerson and Thoreau) to contemporary writers such as Michael Pollan and Barry Lopez.

Writing course.

1 credit.

Fall 2012. Bolton.

ENGL 009D. First-Year Seminar: Nation and Migration

Drawing on novels, short stories, film, and poetry produced by immigrant writers from South Asia, Africa, and the Caribbean, this course explores the ways in which identity and

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community is shaped in the modern world. How does the migrant/diasporic writer rewrite the English language to reflect questions of race and power, nationhood and citizenship, and histories of the past and present? Authors include Salman Rushdie, Nadine Gordimer, Hanif Kureishi, and Michael Ondaatje.

Writing course.

1 credit.

Spring 2013. Mani.

ENGL 009G. First-Year Seminar: Comedy

This course covers a range of comic dramas and comic performances. It will introduce key theories about comedy as a genre and comic performance as a cultural practice. We will also work intensively on expository writing and revision. Likely texts include films, plays by Plautus, Shakespeare, Behn, Wilde, and Churchill; and materials on minstrelsy, genre theory, gender, and performance studies.

Writing course.

1 credit.

Spring 2014. Johnson.

ENGL 009H. First-Year Seminar: Portraits of the Artist.

We will study a variety of works portraying artists in different cultures and contexts and media. The syllabus will vary each year but may include: Scheherazade as story-teller (Arabian Nights selections), Shakespeare (sonnets), Mozart (the movie *Amadeus*), Puccini's opera *La Bohème*, Frida Kahlo's life and work, Lin-Manuel Miranda's Tony award-winning musical *In the Heights* (2008), and a suitable novel, along with selected background and critical materials.

Writing course.

1 credit.

Fall 2012 and fall 2013. Schmidt.

ENGL 009P. First-Year Seminar: Women and Popular Culture: Fiction, Film, and Television

(Cross-listed as FMST 009)

This course looks at Hollywood "chick flicks" and "women's films" and television soap operas, their sources in 19th- and 20th-century popular fiction and melodrama, and the cultural practices surrounding their promotion and reception. How do race, class, and sexual orientation intersect with gendered genre conventions, discourses of authorship and critical evaluation, and the paradoxes of popular cultural pleasures? Texts may include *Uncle Tom's Cabin*, *Gone With the Wind*, *Rebecca*, *The Joy Luck Club*, *Bridget Jones's Diary*. Weekly screenings.

Writing course.

1 credit.

Fall 2012. White.

ENGL 009Q. First-Year Seminar: Subverting Verses

Once history, biography, fiction, philosophy, and even science could be written in verse without seeming peculiar or affected, but today the line between poetry and prose is sharply drawn. Or is it? This course will examine unconventional forms and uses of poetry—from Seneca's *Oedipus* to Rita Dove's *Darker Face of the Earth*, from Geoffrey Chaucer's *Tales* to Vikram Seth's *Golden Gate*, from Bob Perelman's verse essays to Carolyn Forché's prose poems—to explore our assumptions about the nature of genre.

Writing course.

1 credit.

Fall 2012 and fall 2013. Anderson.

ENGL 009R. First-Year Seminar: Old Texts/New Tellings

A study of four traditional literary texts, of critical perspectives or "slants" on the texts, and of modern reshaping of these old stories into new forms. Pairings of old and new will include *Beowulf* and Gardner's *Grendel*, Shakespeare's *Hamlet* and Stoppard's *Rosencrantz and Guildenstern Are Dead*, Conrad's *Heart of Darkness* and Achebe's *Things Fall Apart* along with Coppola's film *Apocalypse Now*, and various versions of the Cinderella story. There will be both critical and creative writing assignments in the class.

Writing course.

1 credit.

Fall 2013. Williamson.

ENGL 009S. First-Year Seminar: Black Liberty, Black Literature

How have African American writers told stories of freedom, and how have they tried to tell them freely? How has the question of freedom shaped the development of, and debates over, an African American literary tradition? Drawing upon fiction, poetry, personal narratives, and critical essays, we will examine freedom as an ongoing problem of form, content, and context in black literature from antebellum slavery to the present.

Eligible for BLST credit.

Writing course.

1 credit.

Fall 2013 and spring 2014. Foy.

ENGL 009U. First-Year Seminar: Buddhism in American Literature

This course studies the impact of Buddhist thought on American literature, with emphasis on the literature of the Beats. Its focus is on the

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contribution of Buddhist thought to aesthetic practice and metaphysical expression in the American literary tradition. A central question addressed in the course is the possibility, in a "First World" reading of "Third World" religious texts and in the process of cross-fertilization between "East" and "West," of moving beyond the impasses of Orientalism.

Writing course.

1 credit.

Fall 2012. Chin.

ENGL 009V. First-Year Seminar: Cultures of American Humor from Franklin to Fey

Humor is indispensable to us in so many aspects of our lives. But why? What does it do for us? This seminar seeks to make better sense of humor in theoretical, social, historical, and political contexts. The course surveys a variety of textual forms—writing, film, TV, stand up, graphic texts, etc.—to ascertain what humor is and how it functions. Featured writers include Ben Franklin, Fanny Fern, Mark Twain, Zora Neale Hurston, James Thurber, Molly Ivins, Sherman Alexie, David Sedaris, and Tina Fey.

Writing course.

1 credit.

Fall 2012. Murray.

ENGL 009Y. First-Year Seminar: Interrogating Gender: Centuries of Dramatic Cross-Dressing

Do clothes make the man? Or the woman? Do men make better women? Or women better men? Is gender a costume we put on and take off? Are we really all ways in drag? Does gender-bending lead to transcendence or chaos? These questions and their ramifications for liminalities of race, nationality and sexuality will be our focus in a course that examines dramatic works from The Bacchae to M. Butterfly.

Writing course.

1 credit.

Fall 2012. Finberg.

ENGL 009Z. First-Year Seminar: Literature Against History?

Do we need history in order to read literature, or does it simply get in our way? In this class, we will study the conflict between text and context in literary interpretation. Our syllabus will include texts like Jane Austen's *Mansfield Park*, Virginia Woolf's *To the Lighthouse*, Shakespeare's sonnets, John Donne's poetry, Erich Auerbach's *Mimesis*, Roland Barthes's *Mythologies*, Cleanth Brook's *The Well-Wrought Urn*, Frederic Jameson's *The Political Unconscious*, and Eve Sedgwick's *Touching Feeling*.

Writing course.

1 credit.

Fall 2012. Buurma.

010–096: Advanced Courses

These courses are open to freshmen and sophomores who have taken a Writing course from any department on campus and to juniors and seniors without prerequisite.

Core Courses

For fuller descriptions, see the following:

ENGL 010. Core Course: Survey I: Beowulf to Milton*

ENGL 035. Core Course: The Rise of the Novel***

ENGL 040. Core Course: Victorian Literature and the Culture of the Review

ENGL 045. Core Course: Modern British Poetry

ENGL 052A. Core Course: U.S. Fiction, 1900–1950

ENGL 052B. Core Course: U.S. Fiction, 1945 to the Present

ENGL 053. Core Course: Modern American Poetry

ENGL 061. Core Course: Fictions of Black America

ENGL 076. Core Course: The World, the Text, and the Critic

014–019: Medieval

ENGL 010. Core Course: Survey I: Beowulf to Milton*

A historical and critical survey of poetry, prose, and drama from *Beowulf* to Milton. This will include British literature from the following periods: Anglo-Saxon, Middle English, Renaissance, and 17th century.

1 credit.

Fall 2013. Williamson.

ENGL 014. Old English/History of the Language*

(Cross-listed as LING 014)

A study of the origins and development of English—sound, syntax, and meaning—with an initial emphasis on learning Old English. Topics may include writing and speech, a history of morphology, the changing phonology from Old to Middle English, Shakespeare's puns and wordplay, a history of sounds and spellings, modern coinages, and creoles. We range from *Beowulf* to Cummings, from Chaucer to Chomsky.

This course may be taken without the usual prerequisite course in English; however, it may not serve in the place of a prerequisite for other advanced courses.

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Counts as humanities distribution credit under this listing.

1 credit.

Spring 2014. Williamson.

020–029: Renaissance and 17th Century

ENGL 020. Shakespeare*

We'll cover many topics in this survey of Shakespeare's plays, including kingship, comedy and tragedy, familial relationships, sexuality, race, performance, the roles of women, language, and the rewriting of history. We will frequently return to the question of theater's place in early modern England, while also examining the place Shakespeare holds in the cultures we inhabit. The list of plays may include *Taming of the Shrew*, *Henry V*, *Midsummer Night's Dream*, *Twelfth Night*, *Measure for Measure*, *Hamlet*, *Othello*, *Lear*, and *The Tempest*.

1 credit.

Fall 2012 and fall 2013. Johnson.

ENGL 027B. Performing Justice on the Renaissance Stage*

Courtroom spectacles—tragic injustices or the satisfying punishment of villains—have become familiar sources of entertainment. This course will examine how Shakespeare, Jonson, and their contemporaries turn repeatedly to the law for dramatic energy. Their plays compel a number of questions: what does it mean to take pleasure in injustice? What is the relationship between human and divine justice? These questions often demand historical answers, and our class will examine how dramatic works think through specific developments in legal thinking and practice.

1 credit.

Fall 2013. Song.

ENGL 028. Milton*

Study of Milton's poetry and prose with particular emphasis on *Paradise Lost*.

1 credit.

Spring 2014. Song.

030–039: Restoration, 18th Century, and Romantic

ENGL 033. The Romantic Sublime*

"The essential claim of the sublime is that man[sic] can, in speech and feeling, transcend the human" (Weiskel). What does this transcendence look like? How is it achieved? What resources does it offer us, and at what cost? Authors include Burke, Blake, the Wordsworths, Coleridge, Byron, the Shelleys, and Keats.

1 credit.

Fall 2012. Bolton.

ENGL 035. Core Course: The Rise of the Novel***

In this course we will examine the development of the novel, from its origins in a multiplicity of diverse literary genres to its Victorian incarnation as a "realist" and middle-class form through the appropriation of the novel as high art by Modernist writers and its subsequent return to multi-genre roots later in the 20th century. We will trace changes in the novel's formal features as they relate to its treatment of themes such as publicity and privacy, the role of gender and sexuality in social life, the significance of monetary exchange, and the proper relation between the author and his or her text. First surveying the main critical narratives of the novel's "rise" or development, we will move on to see how the material form of the novel might offer us a counter-narrative to more conventional interpretations of the genre's origins.

1 credit.

Fall 2012. Buurma.

040–049: Victorian to Modern

ENGL 040. Core Course: Victorian Literature and the Culture of the Review

This course offers an introduction to Victorian literature and culture through a focus on the review, a genre the Victorians both raised to an art form and used as a weapon in fighting the pettiest of personal battles. Often vilified as vampires who sucked their living out of other writers' works, reviewers nonetheless occupied a central and defining role in Victorian literary culture. First locating ourselves by taking a quick look at our current 21st-century ideas about book, music, and film reviewing, we will move on to examine some of the most important—and most reviewed—works of Victorian literature, by authors such as Bronte, Eliot, Tennyson, Darwin, Mill, Barrett Browning, Pater, and Wilde.

1 credit.

Spring 2013. Buurma.

ENGL 041. The Victorian Poets: Eminence and Decadence

From Tennyson's mythic moralizing to Robert Browning's vivid ventriloquism, from Elizabeth Barrett Browning's sharp-eyed social commentary to Oscar Wilde's tragic outrageousness, this course examines the responses of the Victorian poets to the stresses peculiar to their era.

1 credit.

Spring 2014. Anderson.

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ENGL 045. Core Course: Modern British Poetry

Steven Spender called them “recognizers,” creating a complex, fractured art out of circumstances they experienced as extraordinary, unprecedented. This course examines the responses of British male and female poets—and some American expatriates—to the wars, shifting beliefs, complicated gender roles, and other dislocations of early 20th-century life.

1 credit.

Spring 2013. Anderson.

ENGL 048. Contemporary Women’s Poetry

“Merely the private lives of one-half of humanity.” Thus Carolyn Kizer defines the 20th-century revolution through which women poets give voice to the previously unspeakable and explore the political implications of the supposedly personal. This course considers a variety of poetic styles and stances employed by women writing in English today—feminist or womanist, intellectual or experiential, lesbian or straight, and mindful of ethnic heritage or embracing the new through artistic experimentation.

1 credit.

Spring 2014. Anderson.

ENGL 049. Contemporary Irish Poetry

Ireland’s complicated historical divisions have provided fertile ground for extraordinary poetry, both in the Republic and in the North. This course will consider poetry by Heaney, Boland, Carson, McGuckian, Muldoon, and ni Dhomnaill (among others) within the sociopolitical contexts of contemporary Ireland.

1 credit.

Spring 2013. Anderson.

050–069: American (Including African American, Asian American, and Native American)

ENGL 051. Faulkner: The Major Work

This course will explore the arc of Faulkner’s career as a supreme 20th-century American novelist. We will focus on the major work from 1929 to 1942—*The Sound and the Fury*, *As I Lay Dying*, *Sanctuary*, *Light in August*, *Absalom, Absalom!*, and *Go Down Moses*. Ancillary attention will be paid to his short stories and his public addresses (during the Civil Rights turmoil of the 1950s), as well as to the most significant commentary devoted to him. Questions to be raised include: What dimensions of *The Sound and the Fury* launch Faulkner as a major novelist? What continuities and departures emerge in his subsequent fiction? What light does his work shed on the

turmoil of race relations in America? How has Faulkner’s reputation altered in the past half-century, and what do those alterations tell us about the history of American aesthetic and cultural values? In sum, what has his work meant to generations of readers, and what does it mean today?

1 credit.

Spring 2014. Weinstein.

ENGL 052A. Core Course: U.S. Fiction, 1900–1950

This course focuses on well-known and newly recognized novelists important for this period. The writers considered vary from year to year but may include Baum, London, Wharton, Hemingway, Cather, Thurman, Loos, Hammett, McCullers, and Steinbeck. There will be attention to innovations in the novel as a literary form and to the ways in which writers engage with their historical context. The reading load will be heavy, averaging a novel a week. The class will be taught in a way suited to literature majors but accessible for non-majors.

1 credit.

Fall 2012. Schmidt.

ENGL 052B. Core Course: U.S. Fiction, 1945 to the Present

Major authors and emerging figures, with attention to innovations in the novel as a literary form and the ways in which writers engage with their historical context, both within the U.S. and globally. The list of authors is still being worked on, but may include James Agee, Jennifer Egan, Jonathan Franzen, Gish Jen, Sandra Cisneros, Richard Powers, Gary Shteyngart, and Zadie Smith. We’ll read some authors producing what is marketed as “genre” fiction, but we’ll critique that category and take their work as important contributions to the history of the novel: Patricia Highsmith, William Gibson (*Neuromancer*), and Neil Gaiman (*American Gods*). The reading load will be heavy, averaging a novel a week. The class will be taught in a way suited to literature majors but accessible for non-majors.

1 credit.

Spring 2013. Schmidt.

ENGL 053. Core Course: Modern American Poetry

An introductory survey of the full range of twentieth-century American poetry, but we will commence with Whitman and Dickinson, two key predecessors and enablers. The emphasis will be on particular poets and poems, but a recurrent theme will be poetry’s role in a democracy: is poetry really an esoteric art for the “educated” few, as some imply, or has poetry in the twentieth century played a crucial role in shaping both democratic citizens and a

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sense of democratic culture? A new module created for ENGL 053 will focus on the songwriters of the “Great American Songbook” era from the 1920s through the 1950s—including Berlin and Gershwin and Porter, plus various blues lyricists and country singers—as American poets returned to poetry’s roots in song. We’ll study a few examples of contemporary singer-songwriter-rappers too. The course will emphasize the basics of poetic form and poetic rhythms, as well as interpretative strategies relevant for understanding and author’s individual voice and the ways in which his or her poems engage with U.S. history and ideas of the poet’s vocation in society. The class will be taught in a way suited to literature majors but accessible for non-majors.

1 credit.

Spring 2013. Schmidt.

ENGL 053R: Advanced Research Topics in U.S. Literature

A limited-enrollment, research-oriented colloquium for students who have done well in a previous U.S. literature course and would like to do advanced work. For the first part of the semester we will focus on readings and research materials chosen by the professor, to learn some basic methods and theory relevant for contemporary archival research using print and online resources. Later in the semester students will be able to propose, design, and present their own research project to the class. Students will conclude the course by writing a research thesis on a topic approved by the professor; they will also write a short paper on the earlier materials.

1 credit.

Spring 2014. Schmidt.

ENGL 055A. Native America and Early American Fiction(s)*

This course studies pre-1830 representations of Native American peoples and cultures in Native and nonNative texts, including oral narratives, addresses, journals, poetry, ethnography, and archival material, with an emphasis on fiction from 1790 to 1830. Central questions in the course involve issues in reading early American Native voices, the historical and ideological implications of textual (re-)presentations of Natives, and the cultural value of studying Native America in early American fiction(s). Some authors include Columbus, Morton, Bradford, Canassatego, Apess, Handsome Lake, Red Jacket, Rowson, Brockden Brown, Cooper, Child, Schoolcraft, Jemison.

1 credit.

Spring 2013. Murray.

ENGL 061. Core Course: Fictions of Black America

A survey of significant novels and short fiction produced by black writers in the past century. We will examine the textual practices, cultural discourses, and historical developments that have informed the evolution of a black literary tradition, paying close attention to the dynamic interaction between artist, culture, and community.

Eligible for BLST credit.

1 credit.

Fall 2013. Foy.

ENGL 065. Asian American Literature

How does Asian American literature function as the site of key debates about ethnic and national identity? This course explores Asian American cultural production over the past 50 years, beginning with *Flower Drum Song* (1961), the first Hollywood film starring an all-Asian American cast, and ending with the Pulitzer Prize-winning author Jhumpa Lahiri’s short stories. We will also read a number of major Asian American novelists and literary scholars in order to explore topics such as Asian American racial formation, gendered narratives of immigration, and the changing face (and space) of Asian America.

1 credit.

Spring 2013. Mani.

ENGL 068. Black Culture in a “Post-Soul” Era

With such terms as “new black aesthetic,” “post-soul,” and even “post-black,” commentators in recent years have sought to characterize contemporary African American culture. This course takes up the challenge of this current moment by exploring the work of black writers who have emerged since the 1960s, examining complementary developments in popular music and visual culture and considering some of the social and political circumstances of the period.

1 credit.

Spring 2014. Foy.

070: Creative Writing Workshops

Regular creative writing workshops are limited to 12 and require the submission of writing samples in order for students to apply for them. Workshops marked with a # combine a balance of substantial literary analysis of models along with creative writing exercises geared to the models; these workshops are limited to 15 and, do not require the submission of manuscripts. Students may normally take only one workshop at a time. ENGL 070A and 070B may normally be taken only once. Creative writing courses do not count as pre- or post-1830 classes.

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ENGL 070A. Poetry Workshop.

The poetry workshop—a course in which students write and talk about poetry—will emphasize the discovery and development of each individual's distinctive poetic voice, imagistic motifs, and thematic concerns, within the context of contemporary poetics. Over the semester, students will write weekly in-class and out-of-class exercises, in addition to responses to weekly reading assignments, as they work to hone their own styles and develop their craft. Required attendance at readings by publishing authors (outside of class hours) will provide additional perspectives. Class is limited to 12 students, accepted on the basis of a writing sample (three to five pages of poetry), due during the week after fall break. The workshop will meet once a week for four hours. Admission and credit are granted at the discretion of the instructor.

Graded credit / no credit.

1 credit.

Spring semester each year.

Spring 2013. Bolton. Spring 2014. Schmidt.

ENGL 070B. Fiction Workshop

The fiction workshop will approach the challenge of constructing compelling narratives through a series of formal exercises and experiments. Students will read and comment on each other's writing as they work to hone their own styles and clarify their thematic concerns. Over the semester, students will write weekly in-class and out-of-class exercises as well as two complete stories for group critique, one of which they will revise as a final project. Readings will average two stories per week. Required attendance at readings by publishing authors (outside of class hours) will provide additional perspectives. Class is limited to 12 students, accepted on the basis of a writing sample (maximum of 15 double-spaced pages) due during the week after fall break. Admission and credit are granted at the discretion of the instructor.

Graded credit/no credit.

1 credit.

Spring semester each year.

Spring 2013. Staff.

ENGL 070C. Advanced Poetry Workshop

Intensive volumes of poetry often represent their authors' conscious statements, made through selection, organization, and graphic presentation. This course—in which students design and complete volumes of their own work—is normally intended as an advanced workshop for students who have taken the Poetry Workshop (ENGL 070A), or—with the instructor's permission—students who have taken ENGL 070D, 070E, 070G, or 070J.

Attendance at readings by well-known writers (outside of regular class hours) will provide additional perspectives. Admission and credit are granted at the discretion of the instructor.

Graded credit/no credit.

1 credit.

Fall 2012. Anderson.

ENGL 070H. Advanced Fiction Writers' Workshop

The Advanced Fiction Workshop is intended for students who have taken the introductory fiction workshop (ENGL 070B) or—with the permission of the instructor—similar fiction workshops at Penn, Bryn Mawr, or Haverford. The class will focus on further advancing your skill as writers. This will include examining ways that other writers have approached their craft—methods used to illuminate characters and narratives, as well as methods of revising and editing drafts to produce polished, finished work. Required attendance at readings by publishing writers (outside of class hours) will provide additional perspectives. Admission and credit are granted at the discretion of the instructor.

1 credit.

Fall 2013. Staff.

ENGL 070J. The Poetry Project: Research and Development#

Behind the poem's eloquence—the ease on the page that, in Yeats' phrase, seems but “a moment's thought”—there's often a structure—scientific, historical, philosophical, literary—supported by focused research. This course will examine works that rely on research—works like Seamus Heaney's bog poems, informed by PV Glob's archaeological treatise *The Bog People*; or Kimiko Hahn's “Reckless Sonnets,” incorporating research on insect reproduction; or Ruth Padel's *Darwin*, a biography in verse; or M. Nourbese Phillip's *Zong!*, which deconstructs the transcript of a law case involving deaths on a slave ship. Students will explore a variety of archival resources available to writers, and write poems suggested by their explorations, culminating the semester with a polished poetic sequence informed by their own research. Attendance at readings by well-known writers (outside of regular class hours) will provide additional perspectives.

1 credit.

Fall 2013. Anderson.

ENGL 070K. Directed Creative-Writing Projects

Students—whether course or honors majors—who plan a directed writing project in fiction or poetry must consult with the department chair and with a member of the department's writing faculty who might supervise the project and

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must submit a prospectus to the department by way of application for such work before the beginning of the semester during which the project is actually done. The number of these ventures the department can sponsor each year is limited. Deadlines for the written applications for the Directed Creative Writing Projects are the Mondays immediately following the fall and spring breaks. Normally limited to juniors and seniors who have taken an earlier workshop in the department.

For creative writing projects in the Honors Program, the 2-credit field will normally be defined as a 1-credit workshop (ENGL 070A, 070B, 070C, or 070H) paired with a 1-credit Directed Creative-Writing Project (ENGL 070K). The approximate range of pages to be sent forward to the examiners will be 20 to 30 pages of poetry or 30 to 50 pages of fiction. There will be no written examination for the creative writing project; the student's portfolio will be sent directly to the examiner, who will then give the student an oral examination during honors week. For purposes of the transcript, the creative writing project will be assigned a grade corresponding to the degree of honors awarded it by the external examiner. Students are advised that such independent writing projects must normally be substantially completed by the end of the fall semester of the senior year as the spring semester is usually the time when the senior honors study essay must be written.

Graded credit/no credit.

1 credit.

Staff.

ENGL 070L. Creative Writing Outreach (Cross-listed as EDUC 073)

Where do arts, education and activism meet? In this course students will explore artistic affinities through creative writing activities and consider arts education and advocacy through diverse texts. Students will cultivate skills necessary to becoming Teaching Artists in imaginative writing at the elementary level through coursework as well as through volunteer placement in local schools. Topics covered include: creative curriculum development and presentation, educational climate for grades K–5 and teaching pedagogy. Limited to 12.

EDUC 014 is required to receive Educational Studies Department credit for this course.

1 credit.

Spring 2013. Browne.

071A–Z: Genre Studies

ENGL 071B. Core Course: The Lyric Poem in English***

A survey of the history of the lyric poem in English from its origins in Old and Middle English to contemporary poetry, using an anthology. There will also be special emphasis on the essentials of prosody, the study of meter and rhythm. Each version of the course will also feature the in-depth study of one poet.

Note: By arrangement with the professor, this course may be counted as either pre–1830 or post–1830 but not both.

1 credit.

Fall 2013. Schmidt.

ENGL 071L. British Drama 1400–1800: Piety, Revenge and Scandal*

Approaching the plays not just as texts but as living works of theater, this course will trace the staging of historical, political, and social changes from the Middle Ages through the late eighteenth century. We will start with the medieval mystery plays and Renaissance tragedies and continue through the development of different forms of British comedy, from the comedy of humors to bawdy Restoration comedies to the comedy of manners.

1 credit.

Spring 2013. Finberg.

072–079: Comparative Literature/Literature in Translation

ENGL 074. Modern Epic: Tolstoy, Joyce, and García-Márquez

This course will examine three “encyclopedic” texts (*War and Peace*, *Ulysses*, *One Hundred Years of Solitude*) that rehearse and interrogate inherited paradigms of cultural identity, purpose, and destiny. Through sustained attention to formal and ideological tenets of these specific texts, we will also seek to identify some of the salient procedures of realist, modernist, and postcolonial narrative.

1 credit.

Spring 2013. Weinstein.

ENGL 076. Core Course: The World, the Text, and the Critic

In his collection of essays, *The World, The Text, and the Critic* (1983), the literary critic Edward Said argues, “The point is that texts have ways of existing that even in their most rarefied form are always enmeshed in circumstance, time, place, and society—in short, they are in the world, and hence worldly.” This core course explores the “worldliness” of literary texts that are shaped